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OKLAHOMA STATE MEDICAL ASSOCIATION

EDITORIALS

GERIATRICS

From the Harvard University Press comes the most readable, authoritative and practical treatise on diseases in old age the writer has seen. The author of the attractive 300 page volume is Dr. Robert T. Monroe,[1] Clinical Associate in Medicine at the Harvard Medical College. The work is based upon a clinical, pathological and therapeutic study of the record of 7,941 patients admitted to Peter Bent Brigham Hospital during the past 30 years.

Sometime ago Dr. Winnie M. Sanger presented a paper to *The Journal* which, though it merited favorable consideration, it could not be published at the time. It embodied some of the principles recommended in this valuable book, namely, the need of accumulating a body of facts and methods similar to those which have come to be known and accepted in pediatrics.

This comprehensive study by a thorough, sympathetic student of disease in old age supported by carefully gathered statistics should be welcomed not only because of the author's integrity but because it has a background strongly suggesting a high degree of accuracy and authenticity. The case run for 26 of the 30 years had to pass the clinical scrutiny and common sense therapy of Dr. Henry Christian. Those cases coming after his retirement had to pass the erudite Dr. Soma Weiss and Dr. George W. Thorn. The pathology is based upon the findings of Councilman and Wolbach.

The book is valuable in that it makes available much useful knowledge and proposes ways and means of meeting many of the mounting problems of old age. If we must accumulate a super-abundance of years, it is important that we learn how to make the most of them.

1. Diseases in Old Age, a Clinical and Pathological Study of 7,941 individuals over 61 years of age. Robert T. Monroe, M.D., Harvard University Press, Cambridge, 1941. Price $5.00.

DRUGS — TO BE OR NOT TO BE

The following from the May 19 *Supplement to the British Medical Journal* should cause the reader to write his representatives in Washington to watch the Federal Security Agency and save medicine from the annulling influences of federal control and the confusion of bureaucratic administrative details which would transform physicians into "red tape worms". These few lines are chosen from many under the title "General Practice in London, Work of Local Medical Committee":

"Some idea of the large amount of administrative work done by doctors in the Health Service is given in the report of the London Local Medical Committee for the two years 1949-50. The committee has 82 members, and many sub-committees have been formed to deal with special aspects of Health Service administration.

". . . A subcommittee has powers delegated to it to determine whether a substance prescribed is or is not a drug. Its decision is made on the facts of each individual case, and it has sometimes held that the same substance was on one occasion a drug and on another not. 'Where it is obvious that a preparation has been ordered for its food or cosmetic value, and there is no question of a therapeutic effect, it cannot be found that the substance was a drug, and in such circumstances the doctor concerned is surcharged with its cost. The fact that the substance, as a food, was beneficial to the patient does not make that patient entitled to it under the provisions of the National Health Service.' In 69 cases that came before the subcommittee the substance in question was considered to be a drug, in 45 it was considered not to be, and 2 cases were withdrawn.

"The local medical committee has not yet been called upon to conduct any investigations into excessive prescribing, certification, or record keeping. But as regards alleged excessive prescribing, 'the present quietude will probably be disturbed in the near future'."

In the light of this confusion and loss of initiative and liberty can the American physician afford to sit idly by while we drift toward the same type of controls which have so handicapped British medicine?

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LEA A. RIELY

After a well rounded half century devoted to the cause of medicine in Oklahoma including significant contributions to organized medicine and his services on the teaching staff of the University of Oklahoma School of Medicine, Dr. Riely will live in New Cannan, Connecticut.

Through his retirement Oklahoma is losing an earnest, industrious physician. His wealth of knowledge, his broad experience, his forthright integrity, his high sense of humor, his fine dignity and his genial spirit will be sadly missed.

In the promulgation of his intellectual pursuits and the mowing of his Connecticut lawn, he can count on the good wishes of his Oklahoma friends and colleagues.

OKLAHOMA SCORES IN PUBLIC HEALTH

Recently while attending a medical meeting in Baltimore the writer read in the local papers the exciting story of Oscar R. Ewing's attempt to move in, redistrict and take over the public health services in the State of Maryland. But a well organized, smoothly functioning state department of health emphatically said no. Robert H. Riley, M.D., and Doctor of Public Health and a graduate of the University of Oklahoma School of Medicine and Director of the State of Maryland Department of Health since 1928 has ever stood four square against the invasion of his domain by the Federal government.

Polishing up an abiding interest in the life of Riley, I called my one time pupil who is director of a state health service founded in 1874 and developed by Dr. Nathan R. Smith, its first president, when Pasteur was laying the foundation for rapid strides in the prevention of disease. I was warmly received and soon deeply involved in his recollections of Oklahoma and his enthusiasm about the present and future possibilities of public health.

Following a galaxy of distinguished predecessors with a longer tenure of office than any except his public health teacher and mentor, Dr. William H. Welch, he talked modestly about his work and his noteworthy accomplishments.

In the limited space available it is impossible to do more than call attention to the fact that Maryland is outstanding in public health administration and among the most forward looking with reference to state's rights and the recognition of local opportunities and obligations with the resulting protection against bureaucratic policing.

To cite only one example referred to as "the Maryland Health Plan" which has been in operation since 1939 and is being watched with interest by all states, I quote Agnes E. Meyer[1].

"How did this come about? The cooperation of Maryland's medical profession (the State medical society) with the public health departments is a long-standing tradition. Dr. Robert H. Riley, State health commissioner, has used great wisdom over many years in his relationship with the medical profession. And the traditional interest of the doctors in public health is exemplified by such noteworthy achievements as the purification of Baltimore's water system under the leadership of Johns Hopkins' famous Dr. William Welch some 50 years ago."

After pointing out the flexibility of this plan to provide care for the indigent patient, Dr. Maurice C. Pincoffs[1] said:

"In both the counties and the city of Baltimore, participation in the program is voluntary, both on the part of the patient and the physician. Patients choose their physicians and can change physicians. Doctors can accept or reject patients. Stress has been laid on reducing paper work to a minimum.

". . . The people of Maryland like to refer to the State as the 'Free State.' They do not favor a paternalistic form of national government which forces people to do what it considers wisest for them. They have a considerable distrust of the efficiency of Federal bureaucracies as administrative agents. They prefer more local control over the expenditures of tax funds. Furthermore, the doctrine that those without means have a 'right' to livelihood or medical treatment at the expense of others appears to them illogical and un-American. They believe firmly in the older, opposite doctrine of the duty of those who have to help those in need. As for medical insurance, they believe in it heartily and over a third of them are insured in the Blue Cross plan alone, not counting commercial insurance policies. However, they want to take it or leave it as they wish. Marylanders do not like compulsion. It may be recalled that they never ratified the Volstead Act.

"As for the physicians of Maryland, they not only greatly dislike the principle of com-

pulsion in regard to medical care, but in addition feel that the program will further overburden them and result in a lowering of medical standards. They resent the inevitable paper work attached to Federal administrative methods which will reduce their time available for care of patients. They fear the type of burdensome regulations which may result."

The University of Oklahoma should be proud of the man who directs public health in Maryland and inspires such lay and professional cooperation.

Likewise the University of Oklahoma School of Medicine should be proud of our own Commissioner of Health, Dr. Grady F. Mathews. A part of his progressive program particularly worthy of commendation is a recently negotiated contract with the Bureau of Indian Affairs placing the care of the Indians' health under the control of local health agencies.

Another Oklahoma graduate who has made rapid strides in public health and now occupies one of the topflight jobs of the U.S. Public Health Service in Washington is Dr. Jack Haldeman of the class of 1937. Three cheers for these three champions of public health.

1. Maryland Solves Health Problem Without Federal Aid. A Series of Articles by Agnes E. Meyer with a commentary by Dr. Maurice C. Pincoffs, member, Maryland State Board of Health. Reprinted from the *Washington Post*, May 1-5, 1949.

ENTERING GENERAL PRACTICE UNDER THE HEALTH ACT

It is realized that a letter represents only one person's opinion, but this letter is only one of many appearing periodically in the *British Medical Journal* since the Health Service Act was inaugurated in July, 1948. Though representative of controversial issues and not accepted in toto as fact, certainly such letters are to be considered in evidence of serious unrest among those concerned with general practice. This unrest should help all physicians now enjoying the freedom of the American way to see the danger of the present trend to government controls. If the editorial, "Drugs — To Be or Not To Be" does not rate a letter to Washington, perhaps this will:[1]

"Sir,—When the National Health Service was being thrust down our throats I seem to remember that much was said about the intolerable burden of debt and the great difficulty experienced by young doctors entering general practice. That made very good propaganda, but had little or no foundation in fact: we all knew that, but little was said at the time to deny it.

"Now that we are nationalized and everything proceeds on oiled wheels (the usual square ones of nationalization), it has become almost impossible to enter general practice at all. I recently came across a case where a practice was advertised and over 50 doctors applied for it. Of these a short list of about eight was selected by the local committee, and their fares paid from all quarters of the U.K. to come for an interview. A shorter list of three was selected, and of these one was offered the practice and proceeded with his local negotiations over the house, etc. Three weeks later the Medical Practices Committee in London reversed the decision of the local committee, and all eight of the applicants, or should I say supplicants, were summoned, at the taxpayers' expense again, to appear in London, this time before a committee who presumably feel more competent and better versed in local conditions to make a choice. While all this incredible nonsense is going on I have no doubt that the practice is being rapidly absorbed by the surrounding doctors in the town just to add to the fantastic procedure.

"This is only one example, but I have recently met a large number of young doctors trying vainly to get into practice, pathetically anxious, and being faced with a series of these time-consuming applications and interviews with committees, and all the while becoming more and more embittered and cynical. The position is rapidly becoming completely bureaucratic and impersonal, approaching more nearly the cold pseudo-efficiency of the system in force in Nazi Germany and Soviet Russia, on which our present rulers model most of their procedure.

"Can the B.M.A. not try to *do* something to stop the rot and cut out such a cumbersome, expensive, and heartbreaking system? Many of us could see the writing on the wall in 1948, and it has become all too clear since. What was a noble profession is fast becoming a Government department. *Sic transit gloria mundi.* — I am, etc., J. S. Laurie. Pontefract, Yorks."

1. *Supplement to the British Medical Journal.* May 12, 1951, pp. 201-202.

SCIENTIFIC ARTICLES

The Younger Diabetic and the Control of his Disease with the Help of the Hospital Teaching Clinic*

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The Younger Diabetic. The younger diabetic represents an exploration into the unknown. We have had four patients with onset of diabetes under 15 years of age who have died after 30 years of the disease, but to offset these there are 10 times as many, 40, who are living. Ten other cases are known to have died after 25 years of diabetes, but 18 times as many, 181, are alive. What is to happen to the 40 who are living after 30 years and to the 181 alive after 25 years of diabetes? Here, therefore, is the opportunity for each one of us, for you and for me, to demonstrate whether our methods of treatment are sufficiently good to enable our diabetic children to penetrate unknown durations of diabetes and to pass these advanced years in health rather than in suffering. The problem is a sizable one.

The Number of Diabetic Children in the United States. The number of diabetics with onset in childhood now living in the United States is difficult to determine. Assume that there is one diabetic, known not unknown, per hundred population, or 1,500,000 known diabetics in the country. In our own series 13 per cent of the cases are known to have an onset under 20 years of age and I suspect at least eight per cent under 15 years. Allowing that the percentage of children in our clientele is twice the usual, then four per cent, or 60,000 diabetics, are now in the country who began their disease in childhood. This would be about one diabetic child for every two or three doctors. Presumably there are many more, because diabetic children live longer than adult diabetics. Moreover, they demand more care and make far more visits. Today the duration, as well as the expectancy of life, of a diabetic child first coming to the doctor's office will cover more years than the average doctor will continue to practice after the child's first visit.

Diabetes Controllable. Quarter Century Victory Medal Cases. All of us need reassurance that it pays to keep diabetic children alive and in good health. For some time I have believed this possible, but Dr. F. M. Allen has averred it for a generation. Now I know it to be true, because we have collected 27 cases who after 25 years have healthy bodies with perfect eyes and blood vessels free from degenerative disease, thus earning our Quarter Century Victory Medal. We really have another, because Mrs. R. S. after 26 years of diabetes died a few weeks ago of chronic ulcerative colitis. At the postmortem her blood vessels and kidneys were free from vascular lesions and within two years her eyes were pronounced normal by an expert. She technically may fail to get the Victory Medal posthumously, but her career is the most convincing proof we have, because she is the only one in the group of 28 to have died.

This group is pitifully small, but there always must be a beginning. It is my purpose first to show why these few children and young diabetics survived unscathed and then to explain why so many others fell by the wayside.

Reference already has been made to the Quarter Century Victory Medal group. Of the 27 in this series who have sound bodies, perfect eyes and blood vessels after 25 years, 11 are our own. I know whereof I speak when I say these patients controlled their diabetes with rigid dieting, including prolonged under-nutrition for one or more years of their diabetic lives until insulin became available. Even later their diabetic regime was strict with carbohydrate limited to 100 grams for some time, subsequently rising to 150 grams and I suspect even today seldom exceeds 175 or 200 grams, while the protein remains normal for age, weight and height and the fat sufficient to prevent excess weight. I cannot claim the control of the disease after the first few years was perfect, but it has been usually good, never poor, and always with careful adjustment to insulin. These patients exemplify the idea that careful treatment and control of the diabetes in its early course allow health after a quarter of a century. It is only fair to state that all of the cases in the Quarter Century Victory Medal group were in comfortable circumstances, although only one had a private nurse, always watched with great care

*Presented before the General Session at the Annual Meeting of the Oklahoma State Medical Association May 22, 1951.

and treated by doctors well versed in diabetes. There was no medical shopping from doctor to doctor.

This thesis — diabetes controllable — originally and persistently held by F. M. Allen, is also supported by evidence gathered and published by my collegaues. The first of these studies upon diabetic children stems from Dr. Priscilla White. She showed that among 206 diabetics with onset under 15 years of age but of 20 or more years' duration, of the 17 who showed no degenerative complications in the eyes, blood vessels or kidneys, only 10 per cent had had coma; of the 131 with minimal arteriosclerosis, 40 per cent had had coma, but in the 58 cases who were incapacitated by their arteriosclerosis, 60 per cent had had coma repeatedly.

The next investigation of factors prominent in the rate of development of vascular lesions of the kidneys, retinae and peripheral vessels of youthful diabetics comprised a series of more than 200 cases of diabetes developing between the ages of 15 years and 30 years by Doctors Root, Sinden and Zanca. When the records of this group of patients, whose diabetes had lasted from 10 to 25 years, were analyzed, it appeared that a considerable difference in the frequency and severity of these degenerative lesions existed in the group whose control of diabetes had been fairly good, compared with those in whom the control of diabetes had been poor. A third and more meticulous and extensive study was undertaken in 1950 and published in the *American Journal of the Medical Sciences*. This series was analyzed by Doctors James L. Wilson, Howard F. Root and Alexander Marble. It included 247 patients whose diabetes began between the ages of 18 months and 30 years and had been in existence for a minimum of 10 years to a maximum of 34 years. The investigation of these patients included x-ray examinations of the arteries of the legs, pelvis, aorta and chest; studies of the lipid fractions in the blood plasma; ophthalmoscopy; and an analysis of the type of treatment. The patients were divided into four groups according to the degrees of control or lack of control which had been maintained. It was found that no patients with excellent or good control showed advanced calcification or retinitis even after periods of 20 to 34 years of diabetes. No case of diabetic nephropathy (intercapillary glomerulosclerosis) developed in patients with good or excellent control. In 89 patients, one-third of the entire number, no retinal hemorrhages or retinitis was present. In 103 patients with diabetes for periods of at least 20 years and a maximum of 34 years, three of the four cases with excellent control had no retinal lesions; of 54 patients with moderate and marked retinitis all but five had lived under only fair or poor control and none had been under excellent control. These authors arrived at the conclusion that whatever the "unknown" or "X" factors may be in the production of degenerative lesions in youthful diabetes, control of diabetes by the daily use of tests of the urine and adjustment of insulin and a carefully followed diet in order to make the urine sugar free will in large measure control such factors and prevent premature degenerative lesions.

Let us now seek information regarding the control of diabetes from the causes of death of 472 diabetic children, particularly the 135 recently fatal. Frankly, there is nothing mysterious about these recent deaths, because they are largely due to neglect of continued care on their part, that of their custodians or ours. You all know how well diabetic children respond to treatment with diet and insulin in the first period after the diagnosis is made. Within a few weeks after inauguration they look so well that they appear as healthy or even healthier than ordinary boys and girls. So remarkable is the improvement and so wonderful the effect of diet and insulin that the serious nature of diabetes is forgotten. Few die until after they have had diabetes 10 years. Very few, irrespective of the type of control, show complications until 12 or even 15 years of the disease have passed, and such deaths as occur at this period are plainly preventable, being due in most instances to diabetic coma and tuberculosis.

Let us examine the 135 deaths which occurred in the six years between 1943 and 1949. There were 12, or 8.8 per cent, due to diabetic coma. Not one of these occurred at the New England Deaconess Hospital or in fact in Boston. With the almost complete disappearance of mortality from coma at the Massachusetts General Hospital, the Pennsylvania Hospital and the New England Deaconess Hospital, and I imagine at many other hospitals, we are forced to infer that such deaths are deplorable, often inexcusable. This same thought also holds for the 15 deaths, 11.2 per cent, from tuberculosis. We must not forget that diabetes is a good disease and, if the patient does not do well, one must hunt for a reason. Here in Okla-

homa you have been so indoctrinated with the detection and treatment of tuberculosis that I need scarcely mention that a diabetic, especially a child, should have an x-ray of the chest yearly. Among the fatalities of all our patients the tuberculosis death rate has dropped to 2.1 per cent, but it was five times as much in these children and, furthermore, in a special group of our most underprivileged children there were some 20 deaths and 20 per cent of these were from plain old-fashioned consumption. We have details of many of these children and we cannot claim to be free from responsibility in some of these cases. Frankly, these children were not closely enough followed up and examined by us or other doctors. Think of it! Prevent coma and tuberculosis and a fifth of the deaths in children should cease. Note also that even in these children the duration of the disease was considerable, 10 years until fatal coma and 13 years when the end came with tuberculosis.

The most important and largest number of deaths among these 135 cases in the last six years was brought about by disease of the kidney. Of these fatalities the percentage reached 51.9 per cent, or 70 cases. The average duration of the diabetes among these erstwhile children was 18.2 years. We know diabetes is not necessarily followed even after 25 years by renal involvement. Therefore it is our duty to be on the watch for it, to detect it early and combat it. The reduction of this type of deaths offers the greatest field for research and attack. Each one of us must be on the lookout for renal involvement in every child we see and at each visit examine the urine, the blood, the eyes and blood pressure meticulously and if any abnormality is found, so order the lives of these patients that we will thwart its progress.

The other causes of death, save for cardiovascular disease in the heart, eight, and in the brain, two, were only in part specific to diabetes. Infections were responsible for eight deaths; cancer one; accidents seven; miscellaneous five; and seven unknown. The average duration of the diabetes in these 135 fatal cases was 17.2 years — our best record for fatal cases in children.

A comparison of the living diabetic children with the dead diabetic children leaves little doubt that if the diabetes is well controlled, life will be prolonged and with fewer complications. Our control of diabetes is inadequate. I doubt if five diabetics in a hundred in the United States have excellent control, although this is possible. In a recent grading of 160 of my own patients, I know I gave high marks when I classified 38 per cent as having good control, 31 per cent fair, and 31 per cent poor control. Certainly there is a great chance for improvement in our control of diabetes.

The facts gleaned from our 2,873 living and dead diabetic children just recounted serve as a guide to the type of treatment desirable for the child at the commencement of his diabetic career. We know this can last 25 or 30 years and more and that even then 80 per cent can be actively employed. We also know from our recent fatal cases that this average duration of diabetes was 17 years and that the majority of these were preventable. There is, therefore, hope for the diabetic, but no one would pretend that a child's diabetic life will be a bed of ease or that he can live successfully without being in frequent contact with a physician. The relationship between the doctor and the diabetic child is a partnership to last for the life of both. Patients and doctors should realize at the first interview the responsibility which this partnership involves and that it is "to hold from this day forward, for better for worse, for richer for poorer, in sickness and in health until death do us part."

The diabetic child is not a medically remunerative proposition. He must be seen frequently. The chances are overwhelming that the financial return will be low although I grant that the recompense derived from contacts during treatment will be high. Few of the children can pay regular fees for the many visits which are needed. Furthermore, more than a half of the children ought to go to diabetic camps and at our camps they do not half pay their way and it is up to the physician through charitable agencies or his own friends to assure their support. If they do not have camp privileges, they do not get what will bring them or us the most satisfaction in the long run. Here and there, it is true, there is a child who can have the advantage of a specially trained diabetic nurse. Our first Victory Medal case had such a one for seven years. Such a child is sure to do well, but how many households in the United States can secure the full-time services of a tutor-nurse for a single one of their children? The problem of caring for these 2,400 living children, for Dr. Priscilla White's diabetic pregnancy cases of whom she now has 55 awaiting delivery, and for caring for our diabetic physicians, and their

relatives, is a fortunate one at this moment in that it may lead to some association with a Diabetic Trust or hospital which will be beneficial and a relief to all concerned.

Diet. I do not believe it is so much a question as to whether the diet contains carbohydrate 150, 200 or 225 grams as it is whether the diabetes is controlled at these different levels. By control I mean maintenance of health and strength, urine sugar free for all or most of the day and surely not to contain over five per cent of the glucose in the diet and blood sugar percentages below 140 mg. fasting and 200 mg. at other times. Control of the diabetes is the paramount issue.

Insulin should be used in sufficient quantity to control the diabetes. With a child it is extremely difficult, when he or she becomes about 12 years of age, and the greatest effort must be made to protect the child's morale. He must not be embarrassed by insulin reactions.

Each diabetic child should be taught and encouraged to achieve. There is practically no limit to what these young people can accomplish provided they control their disease. They can captain their athletic teams, they can lead their classes in college, they can become Oxford scholars, they can enter nearly any profession; but they cannot do these things unless they control diabetes every single day of their lives. Life insurance companies insist that they keep up an intimate relationship with their physicians.

What incentive can you offer a diabetic? For the girls there is the possibility of marriage and a baby and for a boy one should point out that if he wishes a recommendation for a job, surely his prospective employer will want to know how carefully he keeps his diabetes under control and, like the insurance companies, will want to know in how close connection he is with his doctor.

One of the chief advantages of NPH insulin, and I rather think it will prove to be its chief advantage, is that for its proper utilization there must be knowledge of the state of the diabetes based upon several tests of the urine each day and also such a knowledge of the carbohydrate of the diet as to allow the most efficient distribution between the three meals and the intervening lunches. NPH has forced an integration of insulin, diet and exercise for the best control of diabetes.

Testing the urine more faithfully and frequently than has been done the last decade is essential. There are very, very few diabetics who should allow a day to go by without at least one test. Such testing must not be confined to a specimen before breakfast, but should be taken at different times during the day. My patients who have had the greatest preeminence in business and income have arranged for multiple daily tests. One such individual took home each night to his nurse a teaspoonful sample of each voiding of the urine during the day. He kept these in a small leather case. He never had a reaction. He could not afford to have a reaction because of his leadership in so many organizations. He promised the nurse, who was with him for 23 years, that he would never break his diet and would follow the rules she gave, while in turn her responsibility was to keep him in good health. He survived diabetes 34 years. He was at the height of his career when he died at 71. He controlled his diabetes instead of allowing diabetes to control him.

In your State *Journal* recently an article on NPH insulin was published by your Oklahoman, Dr. Kelly West, whom we have been privileged to have with us this last year. I do not need, therefore, to go into its use in detail. The chief facts are, first, that the children in our diabetic camps, when they changed over to NPH insulin, no longer needed food in the mid-forenoon to avoid the reactions to which they were susceptible when upon crystalline and protamine zinc insulin. Any food which they did not receive in the morning they could take economically in the afternoon, at their evening meal or on retiring. Some of the children required a booster dose of crystalline insulin along with the NPH before breakfast and of course it is most fortunate that the two can be mixed together in one syringe without losing their identities and thus require but one injection.

With our older patients we were hesitant at first about transferring them to NPH insulin, but I can report that it has worked so well that steadily we are placing our diabetics whose disease is even of long duration upon it. There has been no catastrophe. The patients feel happy with it and more contented. You must not expect that NPH insulin alone will do everything, even with the older patients, because one has the child-like type of diabetes in middle life and old age, although rarely, and these exceptional patients must either have additional crystalline insulin or more than a single injection of NPH.

Diabetics who do badly are neglected diabetics. Evidence of this already was given earlier in this discussion, because these younger diabetics died needlessly of coma, of tuberculosis and probably of renal disease. What can we do to help them in addition to office visits and by vacations at diabetes camps? As I see it, we must attack the problem more vigorously. The children must have a more intimate investigation and, as it were, postgraduate instruction such as afforded by a few days' stay in a hospital. Yet hospital costs are now, at least in our neighborhood, almost prohibitive for adolescents. Hospital rates are ten dollars in an open ward and to these one must add perhaps four dollars a day for x-ray, laboratory and other tests. It is this lack of provision for the frequent and detailed instruction of our diabetics which has led us to decide on the creation of a Hospital Teaching Clinic where patients can come at less than hospital rates, remain a few days, be given intensive instruction and depart with a new outlook in life.

The idea of a Hospital Teaching Clinic is not new with our group, because in a modified way we carried this on many years in a semi nursing home opposite the New England Deaconess Hospital where we had some 400 patients a year. From it we learned much. We saw that patients were willing to live happily together and help one another. We found that they liked to come in Monday and leave Saturday noon. When they discovered they were allowed to remain but five days and a half they attended more faithfully the diabetic lectures given by us doctors and the nurses. They took pains to pick up all the information they could about their disease.

The Hospital Teaching Clinic we have in mind would be conducted at less than hospital rates, because the patients will go to a cafeteria. This will save a great deal of nursing expense. Furthermore, the patient in the wards or semi-private rooms can help to take care of their rooms, just as do students at boarding schools and colleges, and the soldiers in the Army. The Hospital Teaching Clinic we hope to have will be adjacent to the New England Deaconess Hospital and thus the patients can take advantage of many of its facilities and thereby be mutually beneficial to both institutions. All of this will tend to lower hospital expense.

Teaching will be the major factor in such a Hospital Teaching Clinic. Teaching will not be limited to patients but will be carried on for the relatives of patients, because it is among them that new recruits for the diabetic army are most apt to be found. Not alone should it be for the relatives and friends of diabetics, but it should be known as a center for the neighborhood where anyone can come to hear talks on diabetes and to learn how to prevent it by avoiding overweight or at the very least how to detect it early.

Nurses and doctors wish additional knowledge about the practical management of diabetics. We believe that in the Hospital Teaching Clinic opportunities can be provided which hitherto have not existed, opportunities at low cost with intensive instruction in the course of a few days. At times they might be accommodated in the clinic itself.

Instruction of students in diabetes at present is based largely on hospital cases with many complications. In a Hospital Teaching Clinic the instruction would include a study of these ambulatory cases. Their course could be watched from day to day. In this way young doctors would get a better knowledge of the management of the disease of the ambulatory patient.

Adult patients need a refresher course in diabetes just as much as children and juveniles. The other morning at our medical-surgical rounds it developed that there were 15 cases with gangrene or osteomyelitis of the legs. There were 10 of these whose condition was brought on or aggravated by the unwise application of heat, hot water bottles, hot water bags, soaking in hot water. All of these lesions were avoidable, just as coma and tuberculosis are avoidable and preventable in young diabetics. These patients had not been taught sufficiently. Consider the useless expense for their care in the hospital. Of these 15 cases the duration of stay of 13 at discharge averaged 31 days and the remaining two have already been in the hospital 75 days. Think of the amount of money wasted, ranging from a few hundred to almost a thousand dollars in some instances and, moreover, this does not allow any fee whatsoever for surgeon or doctor. Is it not worthwhile to have a Hospital Teaching Clinic where patients can be tempted back at less than hospital rates and others learn something useful and save money for themselves and their families and charitable organizations and no end of time for the medical profession?

DIAGNOSIS OF CONGENITAL HEART DISEASE*

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ENID, OKLAHOMA

The accurate diagnosis of congenital malformations of the heart had little more than prognostic value prior to the time that R. E. Gross, M.D., reported the first successful surgical ligation of a patent ductus arteriosus in the *J. A. M. A.* in February, 1939. Since then the ability of the surgeon to correct or at least improve such developmental abnormalities of the heart has rapidly increased and with this the patient reaps great benefit and is removed from the category of a medical curiosity. Because of this it is now our responsibility to recognize and accurately diagnose these heart lesions. It is the aim of this discussion to stress the diagnostic methods that can be used by each of us.

I would like to say a very brief word about the embryology of the heart. The development of the heart takes place between the 21st and the 40th day of fetal life. It begins as a tube attached at each end of the pericardial sac. This tube grows faster than the pericardial sac, thus it forms and S shaped curve with the ventricles being anterior, below, and to the left, and the auricles posterior, above, and to the right. In an over simplification, but adequate for our purpose, these are each divided into right and left chambers by growth of a dividing septum, that of the ventricles a single structure and that of the auricles having a leaf growing from above and below. At the same time the aortic arches are forming with the fourth left aortic arch forming the arch of aorta, the sixth left aortic arch forming the ductus arteriosis.

It is necessary to give a brief discussion of the fetal circulation. As the lungs don't function, oxygenated blood from the placenta passes via the umbilical veins to the right auricle where it then enters the right ventricle and into the pulmonary artery. Most of the blood is shunted from the lungs by the ductus arteriosus with a small amount going through the lungs into the left auricle, ventricle, and finally into the systemic circulation via the aorta. The blood is then returned to the placenta via the umbilical arteries. Blood is also shunted from the right to left heart through the foramen ovale as the pressure in the right auricle is greater than that in the left. Pressures change after birth with the development of pulmonary circulation and the closure of the ductus arteriosus with the pressure in the right auricle becoming equal to and then less than that in the left. Likewise, as more blood reaches the left ventricle from the lung, the pressure in the aorta increases to become equal and later greater than that in the pulmonary artery.

The cause of congenital heart disease remains unknown with one exception. That is the increased incidence of congenital heart disease as well as other abnormalities associated with maternal rubella during the first trimester of pregnancy.

In considering the general diagnosis of congenital heart disease there are several points of importance besides the presence of a murmur. In the study of murmurs it is important to determine its timing, intensity, association with a thrill, and quality of the heart sounds. In infants the persistence of a murmur past its first few weeks of life is usually abnormal. Other valuable physical findings are deformity of the chest, cyanosis, clubbing of the fingers, and retarded general physicial development. Of greatest diagnostic aid is the X-ray image of the heart. Because of this I would like to briefly review the normal fluoroscopic contour of the heart. In the P-A projection the right border of the heart is formed by the right auricle, the great mass of the surface of the heart is formed by the right ventricle with the left border of the shadow being formed by a small portion of the left ventricle, the right ventricle, the pulmonary artery and conus, and the aorta. The left auricle lies posteriorly and projects no shadow on the P-A projection. In the left anterior-oblique position the anterior border is projected by the right ventricle and the aorta. The posterior border made up of the left ventricle, left auricle, and pulmonary artery with a clear space between this structure and the aortic arch known as the pulmonary window. In the

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right anterior oblique view the upper portion of the posterior border is formed by the left atrium and the lower portion by the right atrium. The anterior border is formed by the right ventricle, the convex pulmonary artery curve, and the aorta.

Congenital heart disease has been divided into two large groups by Doctor Taussig in her text . . . incidentally a classic . . . on congenital heart disease. They are divided into (1) those malformations which deprive the body of an adequate amount of oxygenated blood and (2) those which permit the body to receive an O_2 supply sufficient for growth of the individual.

In the first group, that associated with cyanosis early in life, the tetralogy of Fallot has received a great deal of attention because it is one of the most common and because it is amenable to surgical intervention. The tetralogy of Fallot has four basic abnormalities: (1) Stenosis of the pulmonary artery; (2) Dextraposition of the aorta with this structure receiving blood from both the right and left ventricle; (3) A resultant high interventricular septal defect; and (4) A hypertrophied right ventricle as a result of the increased work of this chamber. The course of circulation after birth varies depending on patency of the ductus arteriosus. In this anomaly the ductus arteriosus normally closes but may be somewhat delayed. Before the ductus closes some of the venous blood from the right heart passes through the stenosed pulmonary artery, some through the aorta. The arterial blood from the left ventricle passes into the aorta but a portion of this blood is shunted through the ductus arteriosis to the pulmonary artery. As a result of this shunt, there is adequate pulmonary circulation but when it is removed by the closure of the ductus then cyanosis develops. The clinical findings in tetralogy of Fallot are characterized by intense cyanosis, clubbing of the extremities, and a heart shadow of normal size in the P-A projection. In more detail, in infancy the clinical picture may not be distinctive until after closure of the ductus as described above. General clinical findings after the development of cyanosis includes clubbing as mentioned, a polycythemia due to the decreased oxygen saturation of the arterial blood, dyspnea on exertion with the child often assuming a squatting position for relief of dyspnea after physical activity, and a general stunting of growth. The cardiac findings are characterized by a surprisingly small heart in spite of the obvious severe cardiac difficulties, the presence of a systolic murmur heard best along the left sternal border in the second - third interspace with an associated thrill due to the pulmonic stenosis, and occasionally a decreased pulmonary second sound. The X-ray findings are loss of the normal convexity in the region of the pulmonary conus both in the P. A. and right oblique views, in the left anterior-oblique projection the right ventricle can be seen to be enlarged anteriorly, and the pulsation of the hilar shadows are quite weak due to the decreased flow through the pulmonary artery. The electrocardiogram is helpful in that it shows marked right axis deviation.

The disability from this cardiac anomaly is due to the poor pulmonary blood flow more than to the passage of blood from the right ventricle into the aorta. Because of this the surgical procedure has been to improve pulmonary blood flow by producing a shunt from the general systemic circulation to the lungs . . . an artificial ductus arteriosus. This has been accomplished by Doctors Blalock and Taussig by the anastamosis of either innominate or subclavian artery to the pulmonary artery. This accomplishes two benefits for the patient. It increases his exertional abilities, it relieves cyanosis with its resultant polycythemia and ever present danger of thrombosis.

There are a multitude of other congenital anomalies causing cyanosis at birth . . . these include underdevelopment of the right ventricle, marked dextroposition of the aorta, transposition of the great vessels, anomalies of venous return with venous blood entering the left side of the heart, and pure pulmonic stenosis, almost all of which are incompatible with life after a few months, especially after closure of the ductus arteriosus.

The second group of congenital lesions are those that allow sufficient oxygenation of the blood for growth to adolescence or later. Although these are not at the present time attacked by surgical methods, they are of interest because of differential diagnosis and because of their relative frequency. The first of these is a defect of the auricular septum. This defect may be potential as in patent foramen ovale, or actual when a defect in formation is present. A patent foramen ovale is usually of no significance as the presure of the left auricle is greater than that in the right, thus closing the valve of the foramen ovale. In conditions where there is marked enlargement of the auricles, the

foramen may actually be open. Also paradoxical emboli pass through this potential opening rarely.

In those patients where there is an actual defect in the auricular septum, clinical symptoms and findings are usually produced. In fetal life the circulation is not impaired as the normal course of the circulation is from the right to left auricle via the physiological foramen ovale, and this is unchanged even though the course is through an actual defect in the septum. After birth and in early infancy the pressure in the right auricle may remain slightly higher than that in the left with a resulting right to left shunt. This mixture of venous with arterial blood may be sufficient to cause cyanosis. However, as the pressure changes become established in the left auricle, the shunt changes from the left to the right which in turn causes an increased blood flow through the right auricle, ventricle and pulmonary artery. General clinical findings are suggestive but not diagnostic. As described above, cyanosis may be present at birth and in early infancy, and this is aggravated by those things that increase pressure in the right auricle such as crying or valsalva. These infants are susceptible to respiratory infections, and may fail to gain properly the first six months, only to gain and grow properly after that time. It is interesting that this anomaly is much more common in females. The cardiac findings likewise are not diagnostic in infancy. There usually is a systolic murmur and later a thrill but these are not distinctive. X-ray examination in infancy is not too helpful as the circulation was relatively normal prior to birth with no enlargement of the heart chambers. However, after establishment of normal pressure differences between left and right auricle, the increased blood flow produces enlargement of the pulmonary conus seen best in the P-A and right oblique position. This may be marked. There is also an increase in the pulsations of the hilar shadows.

In these patients the isolated auricular septal opening is probably compatible with fairly normal existence but, unfortunately, with the passage of time these individuals get into difficulty because of the development of hypertension or, more frequently, rheumatic fever. In fact, 60 to 75 per cent of these patients develop acute rheumatic fever. Either involvement of the mitral or aortic valve may occur thus increasing pressures in the left side of the heart which in turn markedly increases the blood flow from the left to right auricle. Mitral stenosis is more common and this association of mitral stenosis with an auricular septal defect causes a clinical picture known as the Lutembacher syndrome. As a result of the marked left to right shunt the blood flow through the right side of the heart is markedly increased causing a definite enlargement and dilatation of the right ventricle, pulmonary conus and pulmonary arteries. These individuals are usually frail, may have a deformity of the left chest due to marked enlargement of the heart. Examination of the heart reveals a basilar systolic murmur plus that of the rheumatic involvement. The most helpful diagnostic aid is the roentgen appearance showing marked right ventricle, pulmonary conus, pulmonary artery enlargement and marked hilar pulsations. These may be some of the largest hearts seen.

The second type of this group has been described as the Eisenmenger complex which differs from the tetralogy of Fallot in that pulmonary stenosis is absent, and, as a result of this, the right ventricle is not enlarged. There is dextroposition of the aorta and an associated ventricular septal defect. The course of the circulation is similar to that in the tetralogy of Fallot except that pulmonary blood flow is adequate due to a normal pulmonary artery. There is some blood from the right ventricle pumped into the aorta, however this is usually not enough to produce cyanosis in infancy or childhood. These patients develop impaired pulmonary aeration in later life due to actual changes in the pulmonary bed, and then do develop cyanosis. It is felt that this pulmonary pathology is in some way a congenital defect associated with this cardiac anomaly. The general clinical findings are not helpful until after the onset of cyanosis when there will be clubbing, hemoptyses, and occasionally a brassy cough. The development of cyanosis after reaching adulthood, and not present as a child, is certainly suggestive of this abnormality. The cardiac findings show moderate cardiac enlargement and the presence of a systolic murmur and thrill at the base of the heart. The fluoroscopic findings depend upon whether or not the pulmonary artery is somewhat enlarged. The usual contour is a boot-shaped heart due to enlargement of the left ventricle which may also be seen to impinge on the retrocardiac space in the left oblique position. When the pulmonary artery is large, it is seen as a convex curve along the left heart border as

in atrial septal defect. In this condition quite helpful data can be obtained from determination of arm to tongue circulation time, and in the absence of cyanosis the oxygenation of the arterial blood may be measured.

The congenital anomaly that has received the greatest publicity is persistent patency of the ductus arteriosus. A few words may be said about the normal closure of the ductus arteriosus. In the usual sequence of events this vessel has the inherent tendency to obliterate and does so even in the face of other congenital anomilies already discussed where the presence of a patent ductus is important to the well being of the child. Normally the ductus becomes functionally inactive soon after birth as the pressure in the aorta and pulmonary artery become equal soon after birth while actual obliteration occurs around two months, but may persist to a degree up to one year. In this anomaly, as the individual grows older, the pressure in the systemic circulation gradually increases, and blood flow is from aorta to the pulmonary artery. This shunted blood increases the work of both ventricles. The increased volume of blood carried to the left ventricle increases its work. Likewise the right ventricle has increased work because of the increased pressure in the pulmonary circulation. General clinical findings are of little assistance. There may be dyspnea, palpitation, and some stunting of growth, all depending on the size of the shunt. It is more common in females. The cardiac finding of a machinery murmur, so called because it is continuous, heard both through diastole and systole, is diagnostic. The murmur is harsh, rasping with a systolic accentuation. The murmur is best heard over the pulmonic area in the second left intercostal space. The development of this "machinery" murmur is dependent on the differences of pressure between the systemic and pulmonic circulation. As mentioned above, this difference is slight in infancy, and a murmur may not be audible the first few months of life. As pressure changes occur with growth, the shunt becomes functional ultimately both in systole and diastole. Other signs including thrill, enlargement of the heart, and a wide pulse pressure depend upon the size of the shunt. The X-ray image of the heart is variable but usually the pulmonary conus is prominent, and there is some degree of cardiac enlargement both of right and left ventricles. The electrocardiographic changes are confirmatory only. In this condition the diagnosis is made primarily by the presence of the characteristic machinery murmur. I would like to give a brief summary of the indications for operation. They are: stunting of growth, great cardiac enlargement, low diastolic pressure, cardiac failure . . . these all being indications of a large shunt. Also the occurrence of rheumatic fever and, certainly, subacute bacterial endocarditis are further indications for operative repair. A contraindication for surgical intervention is the presence of cyanosis and clubbing . . . these indicating a venous arterial shunt and some other associated lesion.

The final anomaly to be considered is coarctation of the aorta. This is of two types: infantile and adult. A few words will suffice for the infantile type. The constriction extends from the left subclavian artery to the point of entrance of the ductus arteriosus. The striking clinical finding is cyanosis of the lower abdomen and extremities due to shunting of venous blood through the ductus arteriosus. This anomaly is normally associated with other cardiac anomalies and the prognosis is grave. In cases where it is an isolated anomaly the development of collateral circulation, etc., as in the adult type may occur.

The second, the adult type, of coarctation of the aorta is of much more importance. In this case the constriction is just proximal to the point of entrance of the ductus arteriosus. During fetal life the circulation is not significantly impaired although the embarassment is probably enough to institute the development of collateral circulation. After birth the only abnormality of circulation is the way in which arterial blood reaches the descending aorta. The collateral circulation is via three anastomatic channels: (1) around the apex of the thoracic cage, (2) by way of the shoulder girdle and (3) through the internal mammary artery. The general clinical findings are often helpful. This anomaly occurs in males much more often than females. These men are usually large, well developed individuals. Presenting symptoms may include headache and throbbing in the head, numbness or coldness of the lower extremities. The cardiac findings include a relatively normal sized heart. The murmur over the aortic area, if present, is faint and systolic in time. There may be abnormal pulsation in the suprasternal notch. The diagnostic findings are those related to the collateral circulation. The pathognomonic signs are bounding pulse in the upper extremities and weak to

absent pulsation in the lower, and hypertension in the arms and hypotension in the legs. The simple procedure of determining the character of the abdominal or femoral artery pulsations in a patient with hypertension may lead to the accurate diagnosis of the condition. Because of the collateral circulation murmurs occur in unusual places such as the interscapular area. Roentgen examination of the heart and chest are important. The cardiac silhouette is not remarkable except in oblique views the ascending knob of the aorta may be prominent and the descending aorta is seen with great difficulty. The characteristic X-Ray change is the notching of the inferior surface of the ribs due to the dilated, tortuous intercostal arteries. In fact, this finding in routine chest X-rays may lead to the diagnosis. Although these individuals usually reach a robust early adulthood, they are then prone to cerebral accidents, rupture of the aorta, cardiac failure, and endocarditis. This lesion is corrected by surgery. An end to end anastamosis has been done, and, where this is not possible, a by-passing operation done with anastamosis of the carotid or subclavian artery to the descending aorta. Let me again stress the simple procedure of determining the character of pulsations in the lower extremity in patients with hypertension, especially young males.

In summary, the three lesions of congenital heart disease amenable to surgical improvements are: tetralogy of Fallot, characterized by cyanosis and longevity; a patent ductus arteriosus, characterized by the machinery murmur; and coarctation of the aorta, characterized by the difference in the force of arterial pulsation between the upper and lower extremities.

FRACTIONAL GLANDULAR DISTURBANCES*

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Not infrequently in clinical practice situations arise in which search for further information proves fruitless. Our knowledge concerning glandular disturbances is one field in which this problem is very frequently met, hence this discussion. The lack of mental and physical facilities prevents arrival at any definite conclusions but if thought and further study along these lines can be stimulated this paper shall have justified itself.

In considering glandular function four basic functional states are recognized: 1. the normal state; 2. a state of hyperfunction; 3. a state of hypofunction; and 4. a state of aberrant function. This latter state, frequently disputed, we choose to think of as being a change in the quality or chemistry of a glandular product; or in some instances as an improperly timed functioning. We must also recognize the possibilities of different degrees of receptivity of the target organs, yet it seems that the clinical picture would still be that of a disturbed glandular function. We should remember that a hormone does not initiate a function but only alters the rate or degree of functioning of an organ.[1] Therefore function of a target organ is only altered by the effects of a hormonal stimulant.

Too frequently glandular dysfunction seems to be considered as dysfunction of the gland in toto. Sub-clinical dysfunctions no doubt exist but until such time that accurate measurements of quantity of hormone available and actual amounts needed are known these dysfunctions may only be suspected. For instance, we have only one hormone for which we have accurate and generally accepted and available means of testing, namely, insulin. And even then we are not measuring the quantity of hormone present but only the results of its deficiency or excess. References to partial dysfunction, or dysfunction of a fraction of a gland, appears to be made mainly by inference. It is generally considered, for example, that the basic cause of thyrotoxicosis, in some instances at least, is an overproduction of the thyrotropic hor-

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mone of the pituitary. No mention is made and no evidence seems to be forthcoming of hyperfunction of other fractions of the pituitary. Likewise diabetes mellitus seems to be, in light of our present knowledge, a primary dysfunction of the diabetogenic principles of the pituitary or the adrenal or both. As diabetes is clinically known we see no evidence of a primary disturbance of either of these glands in totality in the earlier phases of the disease. Later in the course of the disease the markedly altered metabolic processes produce many functional changes of glandular secretions, both totally and fractionally, as does thyrotoxicosis.

These examples are representative of the statement that fractional disturbances of glands appear to be mainly by inference. If we are to be consistent and thorough in our thinking we should then consider the possibility of not only hyper- and hypo- function but also aberrant function of the various fractions of the several glands of internal secretion while the remaining fractions of that gland may be functionally unchanged or perhaps actually be functioning in an abnormal but opposite state. Such consideration may well help us explain many of life's phenomena. Findley[2,3] in his thought producing and provocative consideration of the neurohypophysis and its changes in the aging process and in hypertension apparently recognized the importance of variable fractional disturbances. Specific references in the literature to this particular problem are surprisingly few.

As an illustration of some of the possible situations that may arise with a fractional disturbance consider this case:

A 35-year-old brunet female of shapely build and of general good health developed a complete alopecia, depigmentation and photo-sensitivity of the skin. Complete studies and bio-assays by competent dermatologists and endocrinologists revealed no remarkable discrepancies of glandular functions and treatment has succeeded in producing only a fine fuzzy short growth of snow white hair. Ten years have elapsed and the above changes alone remain as evidence of some internal catastrophe.

A chronological history reveals these facts: A "cystic ovary" was removed by a local surgeon but no pathological examination was done. Some two months after surgery she contracted epidemic parotitis. She became seriously ill with high fever and excruciating pain in the back. There was no pelvic pain. After recovery from this condition she lost all hair and within a year became depigmented and photo-sensitive.

We are aware that the adrenals have a function in connection with both hair growth and pigment formation as evidenced by the hirsutism of adrenal tumors and the pigmentation of Addison's disease. Hypo-gonadism also produces sparse hair growth and photosensitivity as noted by Lamb[4] who also states "No illness or injury, however slight, leaves the adrenals quiescent". However, it may be that these symptoms of hypo-gonadism may in reality be caused by improper inter-reaction between the gonad and the adrenal. In the line of thought of this discussion it seems quite logical to reason that this woman had an adrenal involvement by the mumps that permanently affected only those functions pertaining to hair growth and pigmentation, leaving the balance of the gland functionally intact. This reasoning certainly should not be weakened by the fact that some 40 steroids have at present been isolated from the adrenal cortex and the results produced by each are far from being completely understood.

An entirely different situation that may prove of much greater practical application is presented in this case:

A young woman who had previously had a menstrual irregularity in time, which was corrected by the empirical administration of the gonadotropic hormone from pregnant mares' serum (Gonadogen), presented herself five years later with generalized edema, malaise and headaches. The urine was persistently concentrated but otherwise all urinary, cardiac and A-G studies were consistently normal. There was no response to all commonly accepted anti-edema therapy. The previously mentioned menstrual irregularity again appeared and, again empirically, 10 units of Gonadogen were given. Twenty-four hours later she was edema free, the headaches and malaise had disappeared and the urine was dilute. The menses subsequently became regular. It was found that 10 units of this hormone every two weeks effectively controlled the symptoms and after 18 months of therapy, with the interval being gradually increased according to appearance of symptoms, all symptoms ceased and she has now remained well for two years.

At first glance this might appear to be an ovarian dysfunction but I have failed to find reference to edema as a clinical manifestation of such dysfunction. There is however

a pituitary-gonadal-adrenal relationship and this factor more probably points to the true faults of the situation. The pituitary-adrenal control of water metabolism is becoming more fully understood. In addition to this pituitary adrenal mechanism the pituitary produces the anti-diuretic hormone the lack of which manifests itself as diabetes insipidus, a condition itself which demonstrates a fractional glandular disturbance. An excessive production of this hormone would theoretically produce just such a syndrome as this except for the menstrual irregularity. No reason can be seen why if this fraction can be hypo-functional in diabetes insipidus it may not also in other instances be hyperfunctional.

The adrenal cortex hormone produces diuresis and mobilization of body water. Three mechanisms seem to be involved: 1. an extra-renal action in which water is released from the tissues[5]; 2. a renal factor in which tubular reabsorption is inhibited[6]; and 3. by counteracting the anti-duretic hormone of the anterior pituitary[7].

Gonadogen has been given to two other similar cases: A 19-year-old girl whose edema cleared promptly within 24 hours but who on subsequent injections exhibited horse serum reactions and this therapy was discontinued. A 45-year-old woman who had had intermittent edema for 15 years showed an initial response equally as dramatic but subsequent therapy failed to adequately control the edema. This woman has been studied carefully by Mayo's and no cause has ever been ascertained for her edema. She is a large, so-called "pituitary type", but otherwise presents no clinical evidence of glandular dysfunction. At present she is being reasonably well controlled by a low salt intake and ammonium chloride.

Ten units of Gonadogen were given to an advanced case of cardiac edema. There was no immediate response but a subsequent mercurial diuretic given 24 hours later produced an edema free patient — the first time this result had been obtained with one injection of a mercurial diuretic. Subsequent follow up could not be done but this suggests the possibility of some synergistic action. It has also been noted[7] that adrenal cortex extract produces diuresis in cardiac edema. This suggests further a stimulating action upon the adrenal cortex by the Gonadogen, either directly or perhaps by way of pituitary because of an increased production of ACTH.

In a further attempt to observe this action of this preparation it has been found on a limited number of trials that 10 units of Gonadogen has given prompt relief of severe pre-menstrual tension, and by prompt, I mean within six hours. Inasmuch as it has been noted that in premenstrual tensions there is a preponderance of antidiuretic substance over corticosteroid[7], a factor contained in Gonadogen that reversed this situation would produce diuresis. This could result either by an inhibition of the production of an anti-diuretic hormone or by creating an increased secretion of corticosteroid.

The least that can be said seems to be that some factor is contained in this preparation that in some instances has a beneficial effect in the control of some types of edema. Further study should certainly be had in this matter.

In summary let it be understood that no conclusions are to be drawn from these observations except that further study is needed. Emphasis has been made for the need of more consistent and more thorough thinking regarding dysfunction of fractional parts of endocrine glands when other fractions of the same gland seem to be functionally intact. Specific instances of known and suspected conditions of fractional glandular disturbances have been cited. An hitherto unreported action of the gonadotropic hormone from pregnant mares' serum has been recorded and some very practical applications have been noted for further consideration. Suggestions as to the mode of action of this principle have been discussed.

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NON-PSYCHOGENIC NEURASTHENIA*

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Functional disease and psychosomatic medicine have come to occupy an increasingly prominent role in current medical practice. The art and science of medicine have come far since ancient and Biblical times when much of disease was ascribed to devils and spirits dwelling in people afflicted. Hippocrates added the first scientific touch to the practice of medicine with his accurate observations and descriptions of disease entities. This was gradually developed through the ages by such men as Vesalius with his anatomical studies; Galen and Erhlich, with their thoughts of specific remedies for specific diseases; Lister and Pasteur, with their emphasis on antiseptics and vaccines; Gorgas and Koch, with their research into the causations of bacterial diseases; Virchow, with his extensive researches into the pathology of disease; and Hunter, Sydenham, Bright, and Osler, with their accurate correlation of pathological and clinical findings to elucidate further clinical entities. It was the thought of serious men during this age that pathological alterations would be found to account for every manifestation of disease. It was not until the time of Freud and his followers that psychiatric disease as an entitly appeared on the scene with its concepts of psychogenic disease without pathological findings. The concept of psychogenic causation of disease became very popular and reached its mightiest peak in World War II, when it was common to hear the statement that 70 per cent of all illness is psychiatric, and that half or more of the battle casualties requiring hospitalization were psychiatric diseases.

"Psychosomatic disease" is a commonplace term; so is "functional disease"; and these have come to imply an invariable psychogenic etiology. The purpose of this paper is to re-emphasize that not all disease with psychosomatic or functional symptomatology is psychogenic.

The psyche is a part of an integrated whole constituting a person, but by no means the over-shadowing portion when compared with the physical, the organic, and especially the humoral, the great reservoir of fluid, electrolytes, and hormones, making up the intracellular and extracellular environment. It has often been said that the borderline between the allergic, the endocrine, and the emotional is so indistinct as to be practically inseparable. The effect of Epenephrin, which is a humoral agent (hormone) on the emotions, on allergy, and on other endocrines is a time-honored example. Further impetus to this line of thinking is added by the surprising psychiatric effect of some of the newer hormones, particularly ACTH and Cortisone, whose effect on the personality is above and beyond that which might be ascribed simply to the improved state of well-being. Often, for example, mental *depression* or paranoid state may occur in the face of markedly improved clinical status otherwise.

It is a recognized fact that the list of purely psychiatric or psychogenic diseases is growing steadily smaller as such diseases of specific etiology as dementia paralytica, Wernicke's encephalopathy, Korsakoff's syndrome, multiple small strokes, are removed from the category of diseases previously considered psychogenic or purely psychiatric and now known to be of microbial, degenerative, or deficiency causation. It is further observed that almost all the signal advances in psychiatric treatment have revolved around physical or "organic" measures as a sheet anchor of therapy; these include electric, metrazol, and insulin shock; prefrontal lobotomy; topectomy; vagotomy; stellate ganglionectomy; lumbodorsal sympathectomy; as well as the old standbys, of sedatives, stimulants, and hormones. It is probable that all psychiatric disease or symptomatology must exhibit some alteration in physiology, either intracellular, extracellular, or at the cell membrane, to account for the impairment of function. The fact that we can not now, in our present state of knowledge, see these changes under the microscope or in the test tube is no argument against this. As our techniques improve we will be able to recognize more and more specific diseases as manifestations of

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abnormal intra- or extracellular function. Yes, even schizophrenia and the depressive state must exhibit pathological cellular physiology — it but awaits our discovery!

The examples chosen herein are not intended to disparge psychiatry, for the psychiatrist has made great strides in our knowledge of diagnosis and treatment. Nor do I intend to imply that the emotions have no influence on body physiology; we no longer recognize diseases as those of the body and those of the mind, for the interaction of each of these on the other is such as to preclude any purely mental or purely organic bodily disease.

CASE REPORTS

CASE 1. A. L., is a 33-year-old white female who complains of weakness, nausea, palpitation, nervous chills, prostrating fatigue suddenly occuring after mild exertion, and crying jags coming on in mid-morning. Previous history is significant in that she was a severe feeding problem as an infant and recently had been suspected of various glandular aberrations, especially pituitary, adrenal, ovary (argentaffinoma), and thyroid. Extensive work-ups with x-rays, blood chemistries, perirenal insufflation, electrocardiogram, were all within normal limits. While she was carrying her only child she felt better than at any other time in her life.

On examination she appeared weak, listless, quite emotionally disturbed, and cried several times during the initial examination. She had a black, coarse, excessive hair-growth over her body, particularly over the breast, chest, abdomen (male distribution), extremities, and a moderate excess on the face. An occasional premature contraction of the heart was noted, and the right kidney was palpable but only slightly tender. Otherwise, physical examination was negative. Laboratory data included normal routine laboratory and negative electrocardiogram; Cholesterol 415 mgm. per cent; Glucose Tolerance showing a flat curve with initial level 71.9 mgm., maximum 111 mgm., and 57.2 mgm. per cent at five hours; B.M.R. was −22. With a combination of skin tests, elimination diet, and leukopenic index she was found to be allergic to foods eaten daily including milk, wheat, egg, corn, tapioca, canteloupe, and banana. A diagnosis of multiple food allergies with secondary endocrinopathies was made. Treatment consisted of elimination diet; Hapamine in increasing strength; thyroid, initially one-fourth gr. daily, and finally one gr. daily; and mild sedatives. Within a month she suffered no further attacks of weakness, crying, palpitations, nausea, except when she sampled one of the allergic foods, when symptoms would recur for two days. After three years she is now able to partake of an offending food not oftener than once every five days.

SUMMARY: This case presents strong psychogenic potentialities; largely emotional and neurasthenic symptoms; multiple endocrinopathies, and a common denominator of masked food allergy, with clearing of all the symptoms on elimination of the offending foods.

CASE 2. H. C., 42-year-old white female housewife who for nine months has complained of marked weakness coming on in attacks; dizziness, headaches, crying attacks, inability to sleep nights, and periodic episodes of nausea and vomiting lasting one or two days and responding only to fasting for a like period. These occurred once or twice weekly. There was a hearing defect, left ear, accompanied by slight dizziness and difficulty in accurately setting down a glass, since an ear infection in 1949. Family history of hypertension, with Father, Mother, and two siblings exhibiting hypertension with complications. Past history of appendectomy, hysterectomy; a personal history involving numerous deep-seated encounters with her child who showed a behavior and personality problem which the Mother apparently never could penetrate; considerable sexual desire, never quite gratified; considerable anxiety over a succession of illnesses in her immediate family; and super-imposition of probable menopausal symptoms.

On examination she appeared weak, wan, extremely weepy, occasionally hinted suicide if she did not become better. There was a conduction-type hearing loss of the left ear without apparent change in the drum except retraction; tongue notably smooth, blood pressure 150/90 initially, later returning to 112/66; hyperactive reflexes but vibratory sense present. Laboratory findings included RBC 3,700,000, Hg 11 gms., hematocrit 43, sedimentation rate 9, glucose tolerance curve flat with terminal hypoglycemia to 55 accompanied by prostrating weakness; urinalysis showing few pus cells and E. coli on culture; a normal sternal marrow; achlohydria on routine gastric analysis but showing free hydrochloric acid after histamine; negative G.I. Series, Barium Enema, and Gallbladder Visualization. The cystitis responded to Chloromycetin. A history of beginning ingestion of frozen orange juice

about the time of onset of symptoms was obtained, and when this was stopped she immediately became 50 per cent better, losing her nausea, vomiting, and inability to sleep. When milk, wheat, egg, chocolate, and nuts were likewise stopped her remaining symptoms of weakness, depression, headaches, dizziness cleared, although she still lacked considerably in pep. Once she ate an angel food cake without realizing it contained egg, whereupon her tongue became thick, her speech slurred, she became depressed, and called, crying, with a headache, nausea, and vomiting. Symptoms lasted almost two days, to be followed by complete recovery. Subsequently, milk and wheat were added without difficulty. The anemia responded to Reticulogen and Vitamin B_{12}. At present she feels extremely well, has her previous boundless energy, but is continuing to take the hematinics once or twice monthly.

SUMMARY: A 42-year-old woman of menopausal age with many psychogenic factors and psychosomatic symptoms found to have a macrocytic anemia, a cystitis, and a striking food allergy to orange juice and eggs. This responded to appropriate treatment without formal psychotherapy or alteration of her psychogenic background.

CASE 3, B. D., 41-year-old white female who complained of abdominal pain since a supravaginal hysterectomy performed one year previously; severe occipital headaches of three years duration with tenderness over the scalp; habitual constipation; extreme nervousness, anxiety, crying jags, excessive cold, clammy perspiration when she has her "nervous spells" and some "family trouble".

On examination she appeared anxious, agitated, with a startled look out of her eyes, cold clammy perspiration of the limbs and to a lesser extent the body, quivering and trembling of the extremities and upper lip. The blood pressure ranged from 126/84 to 234/130, with the variations occuring within a period of one day. A soft, smooth, rounded, movable mass was palpable in the right upper quadrant of the abdomen. Palpation of this mass would precipitate an attack of headache, quivering, cold perspiration, and would cause blood pressure elevation. Laboratory and x-ray studies were negative.

On the basis of attacks of paroxysmal hypertension, weakness, perspiration, "nervousness", and trembling, a diagnosis of pheochromocytoma was made and exploratory operation was done. The surgeon reported an inoperable tumor originating, he thought, from the pancreas and a biopsy was not taken. She subsequently was re-operated about a year later and a malignant pheochromocytoma was found, which again was not resected, but was subsequently treated with radiation. She lived an additional 18 months before finally succumbing to the physiological effects of the malignant tumor.

SUMMARY: Another case with "psychosomatic symptoms" based upon abnormal physiology from a functioning organic tumor.

CASE 4, E. F., a 45-year-old, obese, white male mechanic who complained of lower chest and upper abdominal pain, weakness, palpitation, headaches, and emotional upsets with a frequent desire to cry. He had been suspected of having heart disease, but the electrocardiogram was normal. On examination the only positive findings were excessive clammy perspiration of the extremities, rapid regular heart, and a slight liver tenderness. Liver function tests and stool examinations revealed evidence of a moderate hepatitis and endameba histolitica in the stools. He was treated with "Chloroquine", "Carbarsone", and "Diodoquin", with disappearance of liver tenderness and return of laboratory findings to normal. Symptoms cleared approximately 60 per cent, so that he was able to return to work, but began having return of headache and palpitations. Blood carbon monoxide level was positive and on installing a fan in the garage where he worked he has had no subsequent symptoms.

CASE 5, M. M., a 43-year-old white technician, whose husband had died a year previously of a heart attack, and who had had lues with a persistently positive Wasserman for the past 15 years, complained of attacks of epigastric distress, nausea, and occasionally vomiting of undigested food of the preceeding meal. She complained of nervousness, hot flashes, inability to sleep, and attacks of weakness, dizziness, and faintness; numerous times when she would be especially keyed-up she would actually faint. Often she was seen hyperventillating, and during these episodes there would be numbness and tingling of the face and hands. Findings included blood pressure 210/120, with slight narrowing of the retinal vessels, but no disk changes; normal electrocardiogram and laboratory studies, except for repeated positive serology; and invariably evidence of tension and anxiety such as obvious hyperventilation and cold and clammy extremities. She received various combina-

tions of sedatives, thiocyanate, reassurance, changes in environment, and when last seen in the office had a blood pressure of 168/120, and was feeling the best she had for many months. Two days later she developed a sudden severe headache, necessitating hospitalization, and was dead within two hours of hemorrhage from an intracranial aneurysm.

SUMMARY: A woman with an emotionally charged back-ground considered responsible for all of her symptoms, who exhibited an unsuspected intracranial aneurysm, probably on a syphilitic basis.

CONCLUSIONS

In our efforts to consider the patient as an integrated whole and take into due consideration all factors of personality and environment, it is still necessary to exclude all possible organic and physiological abnormalities before assuming that emotional factors occupy an etiological rather than aggravating role in the picture. A few selected case reports have been cited to illustrate the point.

THERAPEUTIC CONFERENCE*

The University of Oklahoma School of Medicine
Presented by the Departments of Pharmacology, Medicine and Zoology

BITES OF VENOMOUS ANIMALS

HAROLD G. MUCHMORE, M.D., A. I. ORTENBURGER, PH.D., AND ARTHUR A. HELLBAUM, PH.D., M.D.

DR. HELLBAUM: As a beginning to this conference, Doctor Ortenburger, will you tell us something of the various types of venomous animals and the nature of the poison and poison apparatus.

DR. ORTENBURGER: The easiest way to introduce this subject is to point out that you can find poisonous animals in practically all of the major animal groups. The only animal groups with no poisonous representatives are the birds, the little tunicates, or sea squirts, the acrania and some molluscs.

We might consider examples from the major animal groups. In the Protozoa are numerous forms, the Infusoria, being the most notable with their trichocysts which you may remember. The Portuguese man-of-war is well known. Most of these are in one way or another poisonous, perhaps not to large animals, but certainly to the smaller ones, and some even to animals the size of man. In the insects there are various types that actually spurt blood, the blood being poisonous and, incidentally, containg a large number of cells that are more like leucocytes than anything else. The hairy caterpillars are apparently worse in Europe than they are here. In certain forested regions the "hairs" of these animals, which have definite toxin secreting cells at their bases, are shed into the air in sufficient number so that if you walk through such a forested region you may develop a severe conjunctivitis without coming anywhere near the animals themselves.

Many animals have stings, and surprisingly we find structures of that sort even among the star fishes and sea urchins. The scorpions are well known to most of you. They have a true sting at the end of the tail. There are over 500 species of scorpions in the world. There are many other venomous Arthropods such as wasps, bees and ants. We will speak more of these later.

There is one mammal, the *Ornithorhynchus* or duck-billed platypus, the most primitive living mammal on the earth today, which has a tarsal spur which is connected by means of a long tube to a gland up higher in the leg which produces a fairly potent toxin. I have read one record of an individual having been jabbed by that spur who was unable to use his hand for something like six weeks. As far as I know there have been no fatal cases.

Certain of the fishes as you may know from painful experience, have poisonous

*This report represents the recording of a Therapeutic Conference held in the auditorium of the University of Oklahoma School of Medicine. These conferences are held each Monday at 4:00 P. M. and are attended by the upper classmen in the School of Medicine, interns, residents, and other physicians. Any physician is welcome to attend and participate. The conferences are conducted under the sponsorship of the Department of Pharmacology.

spines related to various fins. It is interesting that the poison-secreting cells may vary from a thin epithelial layer covering the base of that spine to a rather good-sized and complicated multicellular gland. The poison is an active organic base, whose action is hemolytic with most of the vertebrates. The pain produced by the toxin is quite a serious problem. The animals with poisonous mouth parts such as snakes are those that chiefly concern us here. There are other forms such as centipedes, which use various mouth parts, not teeth of course. That is also true of the spiders. The toxin of the centipede has a hemolytic effect. Of the spiders there is only one that is dangerous, the black widow which we will talk about later. The leech is not ordinarily considered poisonous but does secrete a toxin whose chief action is as an anticoagulant. In other words, except for the few groups that I mentioned at the beginning, throughout the entire animal kingdom we find some poisonous forms, some seriously poisonous and some merely poisonous technically.

DR. HELLBAUM: Since our time is limited, let us start with the treatment of snake bites, and black widow spider bites, and take up the others as time permits. Doctor Muchmore, would you give us first a brief outline of what you would do for snake bite?

DR. MUCHMORE: The immediate thing to do is to determine whether or not the snake is poisonous. It would require considerable training in zoology to identify many of the 2500-odd snakes in the world. Fortunately the situation is not too difficult in the United States. Here we have four kinds of poisonous snakes. The nature of the snake and the site of the bite governs the treatment procedure which should be undertaken. I would say that the bulk of treatment consists in placating the patient and reassuring the relatives, because most snake bites are not poisonous. However, that is evading the issue. The unfortunate snake is usually beaten to death with large clubs and is often rendered completely unidentifiable.

If the bite is from a poisonous snake of good size, you can usually tell whether or not there was an actual fang puncture by examining the site of the bite. That is, this can be done provided someone with a Boy Scout complex hasn't attacked the area with his pocketknife and lacerated it beyond all recognition. Spider bites and other insect bites have frequently been called snake bites when snakes are seen crawling off into the bushes at the time of such a bite. The person thinks they have been bitten by a snake, and lays the bite open, the blood flows freely and nobody has any idea what actually occurred. However, if the person is bitten by a rattlesnake or a water mocassin or a copperhead of respectable size, the symptom of pain at the site of the bite, and the hemorrhage into the area, will generally indicate the snake was poisonous.

The best procedure for treatment has been argued about and still persists. In an article published as recently as 1947, it was recommended that the site of the bite be incised, potassium permanganate crystals rubbed in, and suggested the injection of potassium permanganate solution around the site of the bite. Such treatment usually produces a tissue slough and does not destroy much venom. Dudley Jackson of San Antonio, allowed a rattlesnake to bite a dog and lacerated the bite area, applied a tourniquet and aspirated blood from the site. This blood was then shown to contain sufficient poison to kill four dogs. I think that is ample proof that tourniquet, laceration and suction does remove the poison. Potassium permanganate, gold, and other substances have been recommended because they will coagulate protein. They will denature protein in a test tube, but they also denature protein of the body tissues without any selectivity. Here is a brief treatment plan: Do not run or do anything to speed up circulation. Apply a tourniquet between the bite and the heart. Don't tie it too tightly. It should be tight enough to occlude venous return but not the arterial pressure. Sterilize the skin over the area of the bite, using soap and water and any other antiseptic if desired. With a sharp blade make lacerations approximately a quarter of an inch in depth to allow free flow of blood. If this is done rapidly there will be very little pain, and the patient will likely be in such a state of mental agitation it won't bother him. Of course, over some areas one does not lacerate a quarter of an inch deep because of underlying structures. Apply suction to the incision. Suction is best applied with little bulbs made for the job. It is a stiff rubber bulb with a slightly curved metal end on it and is very efficient. If you don't have an instrument such as that, there are other things available including the mouth. If there are no lesions of the oral mucosa there is no danger of absorption of the toxin. Suction should be carried on for a considerable period and the tourniquet loosened from time to time. The incision and suction are probably the most essential

parts of the treatment other than keeping the patient quiet.

Antivenom is available for American species with the exception of coral snake. This antivenom is put out by several drug companies, effective particularly in a test tube against the toxin. However, the average unit (which sells for $12.00) contains dried antivenom that will reconstitute to 15 cc. If the bite is from a large snake a minimum of probably 50 to 100 cc. should be given if the antivenom is used at all. In other words, three to six of the sets would be $40.00 to $75.00 worth of antivenom. Price is something to consider in using antivenom. Antivenom is given intramuscularly after suitable skin testing. Most kits contain a cc. of horse serum for testing sensitivity. As a side remark, there is a case on record of a man bitten in South America by a bushmaster. He was promptly treated by all of these methods we have outlined. 100 cc. of specific antivenom was injected and the man died in 15 minutes of anaphylactic shock. Subsequently it was found he had been previously injected with horse serum for the same reason some six months before. The antivenom is given intramuscularly around the bite, and may be injected subcutaneously in and around the bite area. If the signs of poisoning are developing rapidly, which may indicate that there has been some direct intravenous injection of the poison, the antivenom should be given intravenously. The efficacy of the antivenom is unfortunately questionable, but probably should be given. However, too much reliance should not be placed on it. Free laceration and suction is the most important part of treatment.

DR. HELLBAUM: Do you wish to add anything to that, Doctor Ortenburger?

DR. ORTENBURGER: The site of the bite is the important point to consider. If you have a nice thick layer of adipose tissue, that is exactly where you should let the snake hit you, simply because of the slowness of absorption from such tissue. The worst place for a bite is about the head. The use of the antivenom I think should be discouraged, as Doctor Muchmore indicated, except in those cases where these other methods seem not to produce results. You may have, in addition to the points mentioned, to sedate the patient with something — it doesn't make much difference what. In one case I had experience with, that was apparently the most important thing to do. The fellow was just wild, scared to death. The main danger of fatal outcome is in those individuals like small children. Apparently this is in part because of the smaller blood volume. In such cases if you use the antivenom, it will take a larger amount, other things being equal. In old individuals, not in good health, the situation may also be serious. I think there is one point that might be stressed and that is not to apply the tourniquet too tightly. Apparently a good deal of that absorption is taking place through the superficial lymphatics and it doesn't take much pressure to cut those off. There is real danger in applying a tourniquet too tightly. As far as an incision is concerned, either a T or a cross-shaped incision can be made if you can find the puncture wound. Doctor Muchmore has mentioned the difficulty of determining from the banged-up remains, whether it was a poisonous snake or not. Usually if the patient has half-way good sense he will know whether he really hurts, that is, whether he has pain localized around the area, or whether it is just the sort of thing you get from scratching your hand. It is a peculiar thing that with a non-poisonous snake bite, as far as I know, you never seem to get an infection from a bite or a scratch from their teeth. I have been bitten literally hundreds of times and never had such a bite or scratch become infected despite little or no treatment.

DR. HELLBAUM: In other words, the best way to recognize a poisonous snake bite would be pain, swelling and discoloration.

DR. ORTENBURGER: One other thing I might mention, and it sounds foolish although there is pretty good sense to it. I have often been asked what to do when a snake does bite you, especially when alone and unable to reach a doctor. One shouldn't run, that would increase the circulation. I think about the only thing you can tell them is to go sit under a tree and smoke a cigarette.

DR. MUCHMORE: We mustn't forget the age-old advocation of alcoholic beverages, and I think we three here will firmly agree that the use of whisky in snakebite should be confined entirely to bites from non-venomous snakes.

DR. HELLBAUM: Suppose a man has been bitten 14 miles from town and is finally brought in by someone four to six hours later. What do you do then?

DR. ORTENBURGER: The method there is still essentially the same. Suction does a very great deal of good up to at least 15 hours and probably longer than that after the actual bite. The tourniquet incidentally should follow the swelling up of the limb. The

treatment still remains about the same. Some stimulants may be necessary, depending upon the individual. Nothing should be given however, even at that time, to increase the rapidity of heart action and the flow of blood, so incision and suction is still good and the tourniquet should follow the swelling, which may involve the whole arm, with many superficial incisions through the skin. No one has died as a result of overtreatment if the treatment has been proper. Severe extravasation of blood occurs and the patient may really look much worse off than he is.

DR. HELLBAUM: Doctor Ortenburger, you have been talking of treating snakebite in general. Are there any distinctions between the type of treatment for the different species?

DR. ORTENBURGER: In the United States the poisonous snakes may be grouped as pit-vipers, because of the pit between the eyes and the nose, and the coral snake. The serum that is available in this country is polyvalent and so it works about equally well for all of these pit-vipers but not the coral snake. It would be better, obviously, if the antivenom were specific for each kind but that has not been practical.

DR. HELLBAUM: If you were going to be bitten by a snake and you had your choice, which would you rather be bitten by?

DR. ORTENBURGER: Leaving out the harmless snakes, the best one to have strike you is, without any question, the copperhead. In the Antivenin Institute of America Bulletin, I believe it reported about 1000 strikes by copperheads throughout the country, treated and untreated, without a single death. That can't be said about any of the other poisonous snakes. So pick out the copperhead every time.

DR. HELLBAUM: In order of potency of the venom, how would you list them?

DR. ORTENBURGER: I suppose the diamondback, the large rattlesnake, would probably be the worst in this country, for three reasons: One, because the toxin is particularly effective on mammals, their natural food being mammals; second, the size of the snake with the corresponding size of the poison gland and hence with the amount of toxin available at a single strike; then third, in a larger snake you have a longer fang, and hence there is greater danger of a possible injection directly into a blood vessel, and at least a much greater amount of venom to be handled.

DR. HELLBAUM: Apparently the prevention is better than the cure, but have you any suggestions which might be used as precautions, that one might use in the open where he could run onto a snake?

DR. ORTENBURGER: I believe that most of the fatal bites, have been those in which the individual has been climbing such as one might do down in the Wichita Mountains. He comes up over a ledge, reaches up and pulls himself up — and he gets hit in the face. Back in the 20's it was quite the thing when you hunted these poisonous snakes to wear thick leather puttees. They even made them out of aluminum. That isn't necessary. Most snakebites have come to people who have been definitely careless. The use of ordinary high boots of soft leather helps. What helps more than that is if you will wear thick wool sox inside and ordinary trousers outside, let them hang outside of the boot, the chances of the fangs getting through your hide aren't very good.

DR. HELLBAUM: Summing up the therapy, one should use tourniquet, laceration and suction as first choice, and supplementing that with antivenom if indicated.

DR. MUCHMORE: It should be mentioned that the bite of a fairly large rattler causes considerable destruction of blood and the therapeutic lacerations result in the loss of both blood and serum, therefore the need for a transfusion or having it available should be considered.

DR. HELLBAUM: What would you do if you were bitten by a coral snake?

DR. ORTENBURGER: That is a difficult question. In the first place, I am glad to say that we have no actual record of a coral snake occurring in Oklahoma. That is something that is fortunate, although they probably occur in southeastern McCurtain County. Don't believe it when someone comes in and tells you that they are sure it was a coral snake. There are two others that look so much like the coral snake that perhaps only an expert would notice the difference. There is a scarlet snake and a scarlet king snake, both the same general colors, and these are regularly confused. The difficulty with coral snake bite is this: the animal in the first

place is likely to chew instead of striking. In the pit-vipers, the venom is about 95 per cent hemotoxin and five per cent neurotoxin. In the coral snake, which belongs to the cobra family, the proportions are about reversed; about a 95 per cent neurotoxin and only five per cent hemotoxin. The situation is serious, and as to actual treatment you would do the same things you would do for any other nerve poison that would cause paralysis of the respiratory centers.

DR. MUCHMORE: One comment about the chemistry of the poison: it seems to be a complex mixture of many substances, some protein and other things. Some recent analyses, unfortunately not on snakes in the United States, have shown that there is a pretty fair amount of hyaluronidase present in the poison, and in the cobra venoms there seem to be some tetraethyl-ammonia compounds which have a curare-like action. Some of the snakes have been reported as having a very high amount of histamine present in their venom. It may give us a lead as to some future therapy; however, I have never seen an article reporting the use of the anti-histamine compounds in snakebite.

DR. HELLBAUM: Our next subject will be that of the black widow spider. Would you mind briefly identifying and also discussing something about the identification and where you find it.

DR. MUCHMORE: I am sure you have all seen a black widow that was positively identified. The abdomen looks like a rich black pearl, as someone so aptly described it, with the red hourglass-shaped marking on the belly, which is not always hourglass shaped. Sometimes it isn't even a bright red. The female's bite is the one which causes the trouble; she looks like she was painted with black enamel. It is hardly mistakable for any other spider. It is not very large; the bulk of them will have a leg spread of a little over an inch in diameter. The bite is characterized by pain and collapse. The pain is abdominal. The belly becomes board-like in rigidity. The actual amount of poison seems to be relatively small, but the distress is very great. Death is uncommon. Many substances have been tried. The most frequently recurring one in the literature is calcium gluconate, intravenously. The results seem to be pretty good with relaxation of the belly wall and lessening of the pain. There are those who say that morphine should not be given because of respiratory collapse and cardiovascular difficulty that may follow. There is an antivenom available for this substance too. Doctor Fred D'Amour of the University of Denver, developed an antivenom. It unfortunately takes a great many spider glands to produce sufficient antibody titer for a usable serum. However, the antivenom is available in Oklahoma City at $6.00 a vial and approximately the same type kit as for snakebite. It is a dried powder to be reconstituted to 2.5 cc. This dose may be repeated in an hour or so if indicated. Results of antivenom treatment haven't been widely reported. It isn't used very much and nobody knows how good it is. D'Amour said that his experimental work showed it was good and that seems to be the consensus. It is available, but most doctors don't seem to know that it is available. Pain, relief of the pain, and sedation of the patient without depressing respiration seem to be the biggest part of the treatment. Calcium gluconate probably doesn't have any specific effect on the venom itself.

DR. ORTENBURGER: I might say this. Apparently more recently than calcium gluconate, calcium chloride, 10 per cent, has been tried with apparently just as effective results. One danger from this black widow bite is that the symptoms may be confused with acute appendicitis or a perforated peptic ulcer. Apparently patients have been lost as a result of operating at the wrong time. Incidentally, of 24 cases reported a few years ago, 22 were male. This is explained by the fact that these cases occurred in the country where the privy is still standard equipment and most of the bites were on the scrotum. The toxin, incidentally, is estimated to be about 15 times as potent as that of our poisonous snakes and something like five per cent of the cases are fatal. That figure seems high, but it has been published.

DR. HELLBAUM: I understand that magnesium sulfate injected is also of value, particularly for the rigid abdomen. One might think from that point of view that physostigmine would be worthwhile, and there possibly antihistaminics would be of value. What about other spiders, Doctor Ortenburger? What about tarantulas?

DR. ORTENBURGER: I don't think there is anything to be concerned about. We have collected some hundreds of tarantulas with some care, not too much, and never had one bite. We once had a dog one summer that brought in as many as 10 or 20 a day by pushing them along with his nose. The dog was never bitten. They look terrible, but don't cause trouble. In fact, as far as I

know, except for this black widow which is easily recognized, you can collect and handle the other spiders of the State without any danger. Many of them are slightly poisonous, but they don't bite often.

DR. HELLBAUM: I understand one of the chief dangers of spider bites other than from the black widow would be secondary infection. The next animal to consider is the Gila monster.

DR. ORTENBURGER: The poison gland in the Gila monster is sublingual. The teeth that are of interest to us are the lower lateral teeth. There are no well developed fangs. These teeth are simply grooved. When they bite they bite very hard. The animal always bites to one side or the other — not straight ahead or up and down. The bite would be quite painful even if there were no poison. The toxin is more nearly like that of the pit-vipers than anything else, largely hematoxic, and the animal has the instinctive habit of turning over on his back if he can after he bites, the reason being that the lower teeth are the grooved ones; he makes the puncture, then if he can turn over a gravity flow carries poison into the puncture wound made by the teeth. The old idea that the danger is simply because of the filthy eating habits of the animal isn't true. However, I think from what I've read, I would rather have a Gila bite than a human bite. The treatment would be about the same as that of a rattlesnake bite. The animal is not vicious. They ordinarly don't bite, and the real danger is from a secondary infection. Incidentally, I don't think that was emphasized enough in relation to the rattlesnakes. There is the danger that comes a month or even two months later, because of the fact that the toxin in good part destroys the normal ability of the blood to fight these infections.

DR. HELLBAUM: We might discuss briefly the treatment of scorpions, bees, wasps.

DR. ORTENBURGER: Let me say this first. Ordinarily, a single scorpion sting, and that really is a sting, a modified ovipositor, usually isn't enough to bother the average adult. I have been stung once or twice. Actually I would much sooner have a medium sized scorpion get me than a large wasp. It is less painful and as far as I could tell there are fewer after-effects. So I don't think the scorpions of ordinary size in this country are particularly dangerous. There is a real danger in multiple stings from any of these arthropods, and there again it depends upon where they happen to sting. A sting from an ordinary bee or wasp in the back of the throat or pharynx may be very serious and require immediate hospitalization, simply because of the marked edema that occurs, and breathing may become impossible. It is far from a joke if anything of that sort happens. Also a good many of these stings are made worse by hypersensitivity. There is great danger from that standpoint. There are differences in individual reaction.

DR. MUCHMORE: The swelling of the glottis is a very serious affair. All of the pharyngeal tissues swell and a tracheotomy may have to be carried out. If there is a little time, an injection of epinephrine may be of benefit. As far as the local treatment of bites and stings from the bees and wasps, apparently the consensus is alkaline applications. Antihistamines have had quite a play as something to relieve the pain locally. Stings on the scrotum are very serious and very painful and require support until the swelling goes down. As far as ant bites, which we haven't mentioned, the same thing applies. They are very painful. Relieve the pain by local applications and in case of multiple bites where there is sensitivity, hospitalization probably is necessary.

DR. HELLBAUM: Suppose some youngster were bitten either by a scorpion or several bee stings or wasps, what would one do in a case like that? Would calcium gluconate, nicotinic acid or any of those help?

DR. MUCHMORE: You could try calcium gluconate and measures for the relief of pain. Local applications should also be made.

DR. HELLBAUM: Would morphine be contraindicated?

DR. MUCHMORE: If the patient shows signs of collapse of course it would.

QUESTION: Is there any form of immunization against snakebite?

DR. ORTENBURGER: Yes, there is. Apparently that was figured out centuries ago by the Seminole Indians in Florida, who actually scraped the skin or made slight incisions and used the venom. You can build that up in the same way it is built up in the horse in the production of antivenin. It will work. I suppose under certain rare conditions it might be worth doing; otherwise certainly not, but it can be done.

QUESTION: What poisonous snakes may be encountered in Korea and Southern Asia in general?

DR. ORTENBURGER: The situation when you get to Africa, India, Asia, and Australia changes just as night and day from the situation we have here. In this country we have one cobra, the coral snake, plus the sea

snake around lower California, which is a cobra also. That is the end of it. As you go in either direction from this continent, the percentage of cobra type snakes jumps immensely. There is a very high percentage in Australia of the cobra type, all extremely deadly. In China, Japan and Korea there are pit-vipers like our own. There are forms there of the same genus as our copperhead. Interestingly enough, they are bright green instead of copper colored, and if it weren't for the color you would recognize them as copperheads immediately. There is difficulty because of the increase in the number of the cobra type snakes. In Korea the situation would be similar to that in China where the pit-vipers predominate. I don't think there is anything there that would be any more dangerous than we have here because of the northern latitude. As you come south you run into more and more poisonous species. There is a very good book put out by the Armed Forces on the reptiles of the Pacific and I think anyone interested should certainly obtain it, as it would be very valuable.

DR. MUCHMORE: We haven't mentioned the poisonous forms found in the warm waters of this country. There is a sea snake whose toxin is quite deadly to fishes. The Portuguese man-of-war and the jellyfish both contain in their tentacles nematocysts, which are capable of causing quite painful and occasionally serious reactions. The Portuguese man-of-war whose tentacles may reach up to 40 feet in length come floating in on the tide and these tentacles drag across the limbs and torso of swimmers. The swimmer may see nothing and have a sudden onset of severe pain and burning across the shoulders, face or arm or other area. The pain is followed soon by redness and swelling and even blistering. The pain is sufficient to cause collapse. The patients are usually hospitalized and an occasional elderly person or youngster has died as a result of contact with the Portuguese man-of-war. Treatment is non-specific, essentially what we have outlined for the wasps and bees, i.e. local applications to the area, and the treatment of pain. Some of the jellyfish are very poisonous. They don't occur in the Gulf waters of the United States. The common one in our waters is the cabbage-head jellyfish, the sting of which is a minor irritation, unpleasant but not serious. One other fish we didn't mention, the stingray, related to the sharks, has a long spine in the tail that is capable of inflicting a severe wound. Although there seems to be a poison present, the greatest danger is the spike, which is several inches long, and may break off leaving a foreign body, and the wound is open to secondary infection.

DR. HELLBAUM: Our time is up, so we will stop at this time and thank both Doctor Ortenburger and Doctor Muchmore for coming here today.

MEET OUR CONTRIBUTORS

R. W. Goen, M.D., Tulsa, is the author of "Non-Psychogenic Neurasthenia" in this issue. Doctor Goen received his B.A. degree from the University of Colorado and also received his M.D. degree there in 1939. He also attended Texas Tech. Doctor Goen served his internship in Denver and while in the army he was chief of the enlisted tuberculosis section at Fitzsimmons General Hospital. Specializing in internal medicine and diseases of the chest, he is an associate of the College of Chest Physicians.

Joe L. Duer, M.D., Woodward, wrote "Fractional Glandular Disturbances" in the August issue. Active in activities of the Oklahoma State Medical Association, Doctor Duer is a member of the public policy committee and the military advisory committee and was councilor at one time. Graduating from the University of Oklahoma in 1932, he practiced at Vici and Taloga before coming to Woodward. He distinguished himself in service with the 27th Marines and received the Purple Heart for action on Iwo Jima. He is a member of Phi Chi, Alpha Phi Mu, and Elks lodge.

James F. Tagge, M.D., Enid, has a paper on "Diagnosis of Congenital Heart Disease" in this issue. Doctor Tagge received his B. A. degree from the University of Oklahoma in 1941 and was graduated from Washington University School of Medicine in St. Louis in 1943. He interned and served his residency at Barnes Hospital, St. Louis. Doctor Tagge was released from service as a captain. His specialty is internal medicine.

Elliott P. Joslin, M.D., Boston, one of the world's foremost authorities in the field of diabetes and guest speaker at the O.S.M.A. 1951 Annual Meeting has a paper on "The Younger Diabetic and the Control of his Disease with the Help of the Hospital Teaching Clinic" in this issue. A graduate of Harvard, he is professor emeritus of clinical medicine at Harvard. Doctor Joslin is a diplomate of the American Board of Internal Medicine; fellow, American College of Physicians and received the American Medical Association Distinguished Service Medal in 1943. He is a past president of the American Society for Clinical Investigation and honorary president, American Diabetes Association. He received the Kober Foundation Medal for Outstanding Research in 1932.

President's Page

Notes from the Atlantic City meeting of the American Medical Association:

Our first impression was of the tremendous extent of the activities of the convention. The Traymore was a beehive of delegation headquarters, committee meetings and hearings, meetings of the Board of Trustees and sessions of the House of Delegates.

The Convention Hall, a huge auditorium, was crowded with the largest group of scientific and technical exhibits that we have ever seen. A conscientious student could have spent an entire week studying the scientific exhibits and considered it time well spent. The technical exhibits were a display of all the sorts of mechanical and medicinal tools we doctors need in our work. There was scientific meat in excess in general sessions, in sessions of the various sections, in color television and in movies.

The business of the Association was conducted by the House of Delegates. This group of 200 men worked hard and earnestly in trying to determine the best policies and programs for all of us. The dues for 1952 remain at $25.00. The confusing Fellowship was not abolished, although proposed and debated heatedly, but it will be changed so that it will represent something other than an additional $5.00 in dues. It will be of interest in Oklahoma to know that our senior Delegate, Jim Stevenson, M.D., was elected to the Standing Committee on the Constitution and By-Laws.

Above all there was inspiration. The general tone in regard to socialized medicine was that *we had won one battle*, that our allies in the fight to preserve freedom were gathering and that above all we must not rest on our laurels but must be ever more alert.

In spite of the length of this page I must quote one of many inspiring paragraphs from the Inaugural Address of President John Cline, M.D.

"We are the most favored among Nations because the light of liberty burns brightly here. Individual freedom, opportunity and incentive are the cherished birthright of our people. Likewise, we of American medicine are most favored among doctors. We live and work in an atmosphere of individual liberty, and we have the priceless stimulus of academic and scientific freedom. We are strong because we possess the dignity of free men."

L. C. McHenry

President

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THAT MORE MAY KNOW

The Research Hospital, designed specifically for careful, long-range studies is now completed and forms the east wing of the Oklahoma Medical Research Foudation building.

The hospital was built on a grant of $225,000 from the National Heart and National Cancer Institutes. However, the Foundation had to assume $25,000 in order to complete the construction. The problem of how to equip the hospital and operate it is yet to be met.

The task of furnishing the hospital is being considered by units of the Business and Professional Women's Clubs throughout the State and three of the hospital rooms have been promised by clubs in Oklahoma City, Duncan and Hartshorne.

There is also the possibility that members of the crafts which built the Foundation and hospital will also participate in this program.

The hospital will have a maximum patient load of 24. It contains two treatment rooms, a small dining hall and a large kitchen area, including a general kitchen and two identical metabolic kitchens.

Present plans are based on the hope that funds will be available so that the hospital can be put in operation by January, 1952.

CONSTRUCTION CONTINUES

Construction on the Central Research Laboratory located on the third floor of the Foundation building is proceeding according to schedule, with custom built wooden work benches and plumbing now being installed. This group of labs will be utilized primarily in conjunction with the work of the hospital.

LIBRARY ACTIVATED

Another recently activated department of the Foundation is the library. Mrs. Ida Lee Gist, an experienced librarian, is in the process of setting up library procedures and techniques.

The Foundation library will work in close conjunction with the School of Medicine library and the library of the Veterans Administration Hospital, when that structure is completed.

TESTIMONY GIVEN

The Oklahoma viewpoint on the necessity for funds to support medical research in the United States was presented recently to a special subcommittee of Congress by Hugh G. Payne, General Manager of the Foundation. Mr. Payne was called to Washington to discuss the problem of medical research from the lay viewpoint.

The committee was considering the formation of policies and the appropriation of funds for support of medical research.

A grant from the National Cancer and National Heart Institutes, which are a part of the National Institute of Health, made possible the construction of the Research Hospital in Oklahoma City.

HAVE YOU HEARD?

Harold T. Baugh, M.D., Meeker, has recently moved his office into a duplex that has been remodeled with his office on one side and living quarters on the other.

T. C. Glasscock, M.D., Ponca City, has recently opened his office in the Community building there. He was formerly associated with the Niemann-Northcutt clinic.

Charles Girod, M.D., formerly of Verden, has accepted a position with the University of Pennsylvania hospital.

Frank E. Flack, M.D., Woodward, is now associated with *Joe L. Duer, M.D.*, and *E. J. Camp* in the Duer-Camp-Flack clinic. *C. C. Keppler, M.D.*, formerly associated with the clinic has moved from Woodward.

James L. Patterson, M.D., Duncan, has received a 25 year pin from the Duncan Kiwanis club.

Frank K. Buster, M.D., formerly of Erick, has recently leased the Cheyenne Hospital from *V. R. Payne, M.D.*, who is taking postgraduate work in Chicago.

Thelma Varian, M.D., a graduate of the University of Colorado School of Medicine, is now practicing in Wagoner.

B. B. Coker, M.D., Durant, recently returned from a week's cruise as a reserve officer in the U. S. navy.

D. L. McAllister, M.D., who was called into the army early this year, has been released and placed in a new classification and has re-opened his offices in Bristow.

Two Ada physicians, *A. R. Sugg, M.D.* and *Ray U. Northrip, M.D.* were recently featured in their home town newspaper as newly elected officers of state organizations. Doctor Sugg is O.S.M.A. President-Elect and Doctor Northrip is secretary of the Oklahoma Association of Pathologists.

OBITUARIES

H. A. HIGGINS, M.D.
1874-1951

H. A. Higgins, M.D., pioneer Ardmore physician and a native of Cheltenham, England where he was born January 7, 1874, died in an Ardmore hospital June 4, 1951 following a short illness.

Doctor Higgins had practiced in Carter County more than 50 years and had received the O.S.M.A. 50 Year Pin. He was active in the Carter County Medical Society and the Oklahoma State Medical Association. He was also a 32nd degree Mason, a member of the Shrine, McAlester consistory, and the last charter member of the Glenn chapter, Order of the Eastern Star. He was a member of the Woodmen of the World and held a club record of 14 years of perfect attendance in Kiwanis club.

Survivors include the widow of the home, one son and two daughters, four grandchildren and two great-grandchildren.

F. E. RUSHING, M.D.
1888-1951

F. E. Rushing, M.D., Tulsa, died June 3, 1951. Doctor Rushing, who had practiced in Tulsa 27 years, graduated from the University of Arkansas in 1912. He served in the army during World War I and was released as a captain. Doctor Rushing was born February 14, 1888.

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BOOK REVIEWS

INTRODUCTION TO GROUP - ANALYTIC PSYCHOTHERAPY — STUDIES IN THE SOCIAL ENTEGRATION OF INDIVIDUALS AND GROUPS. S. H. Foulkes, M.D. London (170 Pages Price $4.50)

This is a concise presentation of Doctor Foulkes' concepts of group therapy. It is written in an easy and readable style, is well documented and thoroughly practical and will certainly provide stimulation for many others who after the necessary training want to direct their efforts into this particular field.

The author deals with the material systematically. Discussing the individual as a whole, psychosomatic symptoms, the Northfield Experiment and the basic law of group dynamics as the introduction to more specific material on the background and types of group therapy. This gradually leads to the group analytic situation, such as numbers of patients, seating arrangement, selection of patients, the conductor's contribution and time factors. Verbatim sessions are used to explain group interaction and the basic principles of (1) active participation, (2) communication in permissive atmosphere and (3) observation in a social setting. There is a chapter devoted to the description of the conductor's part and some of the techniques used.

The last chapter is a comparison of group analysis and other approaches. It also covers views on indications, selection and dynamics of therapy.

Although this book presumes some understanding of psychoanalysis, the dynamics and presentation are logical and practical enough to appeal to those of other orientations. — Phillip R. Apffel, M.D.

DIAGNOSIS AND TREATMENT OF BRAIN TUMORS AND CARE OF THE NEUROSURGICAL PATIENT. Ernest Sachs, A.B., M.D., Research Associate in Physiology, Yale University, New Haven, Conn. Second edition. Cloth $15. 552 pages with 358 illustrations. The C. V. Mosby Company, St. Louis 3, Mo., 1949.

An excellent and outstanding book of one of the foremost pioneers and leaders in the field of neurosurgery.

This book is a complete and up-to-date revision of two of the authors previous works: "The Diagnosis and Treatment of Brain Tumors" and "The Care of the Neurosurgical Patient."

The first chapter deals with salient features of surgical anatomy and physiology of the brain. The second chapter is devoted to the methods and examination and the succeeding six chapters to the different types of tumors; then symptomatology and differential diagnosis.

Considerable emphasis is placed on operative technique and neurosurgical methods in general. Postoperative management is discussed adequately in Chapter 14.

An extremely informative book presented in a clear and straightforward manner, omitting cumbersome details. It should be included in the library of every neurologist, neurosurgeon, medical school, hospital and nursing school.—A. C. Lisle, Jr., M.D.

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OFFICIAL PROCEEDINGS OF THE HOUSE OF DELEGATES

OKLAHOMA STATE MEDICAL ASSOCIATION

May 20, 1951

Oklahoma City, Oklahoma

MINUTES OF THE SECOND SESSION

The Second Session of the House of Delegates was called to order by the Speaker of the House in the Ivory Room of the Mayo Hotel, Tulsa, following a brief recess after the first session. The credentials committee stated that a quorum was present.

The Speaker first called for the Report of the Resolutions Committee and Doctor A. T. Baker, Durant, Chairman, was accorded the floor. Doctor Baker read the following resolutions:

RESOLUTION

WHEREAS, every practicing member of the medical profession, recognizing the contribution to the efficiency of his practice which is made by the assistants in his office, and

WHEREAS, his assistants must be prepared at all times to deal tactfully and diplomatically with the peculiarities and complaints of his patients and his own foibles, and

WHEREAS, the work is in every detail strenuous and exacting, and

WHEREAS, the Medical Assistants Society, composed of this group of well-trained willing co-workers have organized themselves together for the purposes of improving their own efficiency and their value to the Doctors of Medicine with whom they work,

NOW THEREFORE BE IT RESOLVED, that the Oklahoma State Medical Association express to the Medical Assistants Society its gratitude for their efforts on the doctors' behalf, both individually and as a group.

RESOLUTION

WHEREAS, there is a growing tendency in the United States today toward interference and regulation in every field of human endeavor, and

WHEREAS, such interference and regulation is the opening wedge for the encroachment of the socialistic system on the present American system of freedom of endeavor and enterprise, and

WHEREAS, this tendency is not in any way limited to the interests of any particular group, but is being manifested in such widely varied fields as the practice of medicine, housing, power production and distribution and even agriculture,

NOW THEREFORE, BE IT RESOLVED by the House of Delegates of the Oklahoma State Medical Association at its 58th Annual Meeting in Tulsa, Oklahoma, this 20th day of May, 1951, that the Oklahoma State Medical Association hereby denounces as undemocratic and un-American, all and any efforts which will result in the socialization of any business, industry, group or profession, and

BE IT FURTHER RESOLVED, that copies of this resolution are to be directed to the President of the United States and the members of the Oklahoma Delegation in Congress.

RESOLUTION

WHEREAS, the advancement of medical science and knowledge and the consequent increase in the complexity of present day medical care has brought about an unavoidable increase in the costs of medical care, and

WHEREAS, this increased cost, along with present general inflationary tendencies is a heavy burden upon any person requiring medical and hospital care at a time when he is least able to bear such a burden, and

WHEREAS, voluntary health and medical care plans are available and offer to all the people a means of budgeting the necessary expenses of such care, and

WHEREAS, these voluntary plans are available without governmental interference and regulation, and

WHEREAS, these plans are now being provided at a cost to the individual much lower than would be the cost of any type of national compulsory health insurance, and

WHEREAS, these voluntary plans for medical care are growing daily and can readily be expanded to include all persons who could be covered under any government plan,

NOW THEREFORE BE IT RESOLVED by the House of Delegates of the Oklahoma State Medical Association at its 58th Annual Meeting in Tulsa, Oklahoma, this 20th day of May, 1951, that the Oklahoma State Medical Association hereby reaffirms its support and endorsement of every type of voluntary health and medical care coverage available through the commercial insurance companies, fraternal organizations, the Blue Cross and Blue Shield, or any other voluntary societies.

RESOLUTION

WHEREAS, during the past year the Woman's Auxiliary to the Oklahoma State Medical Association has increased the number of its component County and District Auxiliaries to 35, and

WHEREAS, the officers and the members of the Auxiliary have given generously and tirelessly of their time and talents to support every project of the Oklahoma State Medical Association, and

WHEREAS, the work of the Auxiliary membership in carrying out the plans of the American Medical Association National Education Campaign has been particularly outstanding, and

WHEREAS, the defeat of proposals for compulsory health insurance, which is the aim and objective of the National Education Campaign, will help to wipe out the creeping paralysis of Socialism in this country,

NOW THEREFORE BE IT RESOLVED, that the Oklahoma State Medical Association expresses to the Woman's Auxiliary its appreciation for its invaluable service in the present critical period, not only to the profession of medicine, but also to all Americans who want their children to receive the same heritage of glorious freedom which was handed to us by our forefathers.

RESOLUTION

WHEREAS, some twelve years ago the Oklahoma State Medical Association embarked upon a State-wide program of postgraduate medical education, and

WHEREAS, the establishment of such a program would not have been possible at that time except for the financial assistance of the Commonwealth Fund of New York, and

WHEREAS, the Commonwealth Fund of New York provided not only liberal financial support but during that twelve year period provided valuable assistance and advice, and

WHEREAS, the benefits of that program of postgraduate medical education have served the best interests

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of the people of the State of Oklahoma as well as the medical profession, and

WHEREAS, THE Committee on Postgraduate Medical Teaching is at the present time developing plans for the continuation of an effective postgraduate program for the State,

NOW THEREFORE, BE IT RESOLVED, that the Oklahoma State Medical Association, on behalf of its membership and the people of the State of Oklahoma, expresses its most sincere appreciation to the Commonwealth Fund for its assistance and support which have been such a signal contribution to the advancement of medicine and medical care in this State and have produced sufficient interest in continued postgraduate medical education to make further progress possible, and

BE IT FURTHER RESOLVED, that copies of this resolution shall be directed to the Commonwealth Fund of New York.

RESOLUTION

WHEREAS, The Medical Service Society, composed of representatives of pharmaceutical and biological houses, has rendered such a great service to the medical profession of this state, and

WHEREAS, the Medical Service Society is at all times ready and willing to accept its responsibilities in bringing about a better understanding and cooperation between the medical profession and the representatives of their companies, and

WHEREAS, the Medical Service Society has made an outstanding contribution, both financially and otherwise, to the Medical Research Foundation,

NOW THEREFORE BE IT RESOLVED, that the House of Delegates of the Oklahoma State Medical Association commends the Medical Service Society for its outstanding achievements and assures the Medical Service Society of the continued good will of the Oklahoma State Medical Association and with the hope and best wishes for a continued growth and expansion.

RESOLUTION

WHEREAS, in 1950, without consultation with the American Medical Association, the American College of Surgeons entered into negotiations to turn over the function of standardization of hospitals in its entirety to the American Hospital Association, which is a layman's organization not bound by the oath and tradition of American medicine, and

WHEREAS, this move was temporarily thwarted, and

WHEREAS, at the Interim Session of the American Medical Association this subject did not reach the floor of the House of Delegates, and

WHEREAS, rumors of a compromise agreement with the American Hospital Association still persist, and

WHEREAS, the effecting of a compromise agreement dividing the responsibilities between the medical profession and the American Hospital Association would be a deadly blow to the medical control of the professional services of hospitals,

NOW THEREFORE BE IT RESOLVED, that the House of Delegates of the Oklahoma State Medical Association affirm its stand that the American Medical Association, the organization representative of all doctors, assume sole responsibility for the standardization of professional practice in hospitals.

RESOLUTION

WHEREAS, there is a constantly growing awareness upon the part of the people of the state of Oklahoma of the problems of health and medical care, and

WHEREAS, the only institution in the state of Oklahoma devoted to the training of doctors of medicine is the Medical School of the University of Oklahoma, and

WHEREAS, by its very nature medical training is much more expensive than any other type of professional training, and

WHEREAS, the 23rd Legislature has favorably considered the needs of the Medical School and increased the appropriation so as to admit 100 students, and

WHEREAS, that number is insufficient to meet the needs of the people of the state of Oklahoma for the services of qualified doctors of medicine, and

WHEREAS, under the American system of government, matters of education have always been considered as subjects for purely local control, and

WHEREAS, there is at this time a growing sentiment for the Federal Government to provide governmental subsidies for medical education, and

WHEREAS, the present financial status of the Federal Government, complicated by an emergency budget is wholly inadequate to provide such subsidies, and

WHEREAS, the provision of adequate numbers of well trained medical personnel is a responsibility of the people, and

WHEREAS, The medical profession in Oklahoma has in the past and will in the future do everything within its power to encourage the training of doctors of medicine to meet the need,

NOW THEREFORE, BE IT RESOLVED that the Oklahoma State Medical Association urges upon the Legislative Council of the State of Oklahoma that a thorough study of the medical personnel needs of the State be made, and that adequate appropriations be recommended to the Oklahoma Legislature for the purpose of maintaining the enrollment in the Medical School at the University of Oklahoma at such a level that doctors of medicine may be trained to meet the need for their services, by the state of Oklahoma, without any reliance on the receipt of Federal funds.

BE IT FURTHER RESOLVED, that the Oklahoma State Medical Association pledges its complete and wholehearted cooperation in the accomplishment of the purposes of this Resolution.

The Resolutions Committee recommended that the above resolutions be adopted. It was *moved* by V. K. Allen, M.D., Tulsa, that the resolutions be adopted as read. *Motion seconded and carried.*

The Speaker next called for a report of the Committee on Amendments to the Constitution and By-Laws. Ralph A. Smith, M.D., Oklahoma City, Chairman, read the following amendments to the Constitution and By-Laws:

CHAPTER I, Section 3, Sub-Section (b)

Line 24, after the word "Secretary", and before the period, delete the words and figures "January 1, 1950" and insert in lieu therefor the words and figures "January 1, 1952". And on line 25, before the word "Annual" delete the figures "1950" and insert in lieu therefor the figures "1952".

CHAPTER I, Section 3, Sub-Section (c)

Line 27, after the word "Secretary" delete the remaining words and figures in the line and insert in lieu therefor, the following words and figures "before January 1, 1952. After the 1952".

The following *resolution* was submitted by the Oklahoma County Medical Society and referred to the Committee on Amendments to the Constitution and By-Laws:

WHEREAS, the Oklahoma State Medical Association has no provision in its Constitution and By-Laws for members who have been engaged in the active practice of medicine for 50 years and have not retired to become Honorary or Life Members,

NOW THEREFORE BE IT RESOLVED, that Chapter I, Section 3, Sub-Section (b) and (c) of the By-Laws be amended to read: that any member of a county society (for five years) who has been engaged in the active practice of medicine for 50 years, upon the re-

Growth Rates
AND IMPROVED NUTRITION

ACCORDING to an eminent authority,[1] increased growth rates of children are largely attributable to improved nutrition; also, "much evidence exists that current diets are often unsatisfactory." The nutrients most commonly deficient in diets of children are protein, calcium, thiamine, riboflavin, and ascorbic acid.

Ovaltine in milk—a palatable food supplement, readily accepted by children and easily digested—presents an excellent means of helping to bring even grossly deficient diets to optimal nutritional levels. It provides a wealth of biologically adequate protein, easily emulsified fat, readily utilized carbohydrate, and essential vitamins and minerals. The addition of three servings daily to the child's diet, either at mealtime or between meals, assures nutrient intake in keeping with the dietary allowances of the National Research Council—an essential for promoting optimal growth rate.

The nutrient contribution of three servings of Ovaltine in milk is defined in the appended table.

1. Jeans, P. C.: Feeding of Healthy Infants and Children, J.A.M.A. *142*:806 (Mar. 18) 1950.

THE WANDER COMPANY, 360 N. MICHIGAN AVE., CHICAGO 1, ILL.

Ovaltine

Three servings daily of Ovaltine, each made of ½ oz. of Ovaltine and 8 oz. of whole milk, provide:*

PROTEIN	32 Gm.	VITAMIN A	3000 I.U.
FAT	32 Gm.	VITAMIN B_1	1.16 mg.
CARBOHYDRATE	65 Gm.	RIBOFLAVIN	2.0 mg.
CALCIUM	1.12 Gm.	NIACIN	6.8 mg.
PHOSPHORUS	0.94 Gm.	VITAMIN C	30.0 mg.
IRON	12 mg.	VITAMIN D	417 I.U.
COPPER	0.5 mg.	CALORIES	676

*Based on average reported values for milk.

Two kinds, Plain and Chocolate Flavored. Serving for serving, they are virtually identical in nutritional content.

quest of his (or her) county society be eligible for Life or Honorary Membership in the Oklahoma State Medical Association whether or not he (or she) has retired from practice.

As a result of the above resolution, the following amendments were drafted by the Committee:

CHAPTER I, Section 3, Sub-section (b)

Line 3, after the word "medicine" and before the word "and", insert the words "or who has been engaged in the active practice of medicine fifty years or more",

CHAPTER I, Section 3, Sub-Section (c)

Line 9, after the word "hardship" and before the word "may" insert the words "or who has been engaged in the active practice of medicine fifty years or more,"

Amend Chapter IX by deleting the entire Chapter and substituting the following:

CHAPTER IX — COMMITTEES

Section 1. The standing committees of this Association shall be Annual Session, Credentials, Scientific Works and Exhibits, Constitution and By-Laws.

Section 2. Manner of Appointment

The Committee on Annual Session shall be composed of the President, President-Elect, Secretary-Treasurer. All other Standing Committees designated in Section 1 shall be composed of six members who shall be appointed by the President, subject to approval of the Council, for a term of three years, and until a successor has been appointed and qualified; appointments being staggered so that there shall be only two appointed in any one year unless a vacancy shall occur, which shall be filled by the President for the unexpired term of the vacancy except the Credentials Committee which shall be governed by Section 3 (a) of this Chapter.

Section 3. Committee on Credentials

(a) The Committee on Credentials shall be members of the House of Delegates. Members appointed to this Committee shall be members of the House of Delegates at the time of appointment. If any member of the Committee is subsequently not re-elected to the House of Delegates by his County Society or is otherwise disqualified as a delegate, the President shall appoint a regularly certified Delegate to fill the vacancy on the Committee left vacant by the member of the Committee who cannot qualify and the newly appointed member shall serve the unexpired term as long as he is qualified.

(b) The Committee on Credentials shall receive from the Executive Secretary a list of the members in good standing of each component society immediately prior to the Annual Session. They shall also obtain a list of duly elected delegates from each component society and shall determine the eligibility to sit as the authorized representatives of their respective component societies.

(c) In case of contest of delegates from any component societies, the Credentials Committee shall sit in judgment thereon and recommend for approval by the House of Delegates their findings. At the opening session of the House of Delegates, the Credentials Committee shall submit an authorized list of delegates and determine the presence of a quorum before the House of Delegates is authorized to proceed with official business.

Section 4. Committee on Annual Session, with the advice and assistance of the Executive Secretary, shall provide suitable accomodations for the meeting of the Association in the city designated by the House of Delegates at the last previous annual session. They shall designate special committees to have charge of the various activities of the annual session and cooperate with committees of the local society of the convention city. With the cooperation of the Committee on Scientific Work and Exhibits programs of the session shall be prepared sufficiently in advance for publication in the Journal preceding the Annual Session. They shall have jurisdiction over Scientific Exhibits and applications for such should be approved by the Committee before the Executive Secretary is authorized to provide space for them. This Committee is authorized to select and appoint any such sub-committees as, in its opinion and judgment, will facilitate the carrying on of the annual session to the best interest of all concerned.

Section 5. Committee on Scientific Work and Exhibits

The Committee on Scientific Work and Exhibits shall determine the character and scope of the scientific proceedings of the Association at each session, subject to the instruction and supervision of the Council. At least thirty (30) days previous to the annual session, they shall prepare and issue a complete program announcing the order in which papers, discussions and other business shall be presented, and which shall be published in the Journal issued previous to the annual session.

Section 6. Committee on Constitution and By-Laws

The Committee on Constitution and By-Laws shall consider and recommend to the House of Delegates changes in the Constitution and By-Laws to the end that the basic framework of the Association shall accomplish the desires of the membership. The Committee shall meet at such time and place that will allow for the consideration by the House of Delegates of recommended changes to the Constitution and By-Laws at the first meeting of the House of Delegates at which time they might be voted on as otherwise provided in the Constitution and By-Laws.

Section 7. Special Committees

(a) Special Committees may be appointed by the President on his own initiative or on order of the Council and/or the House of Delegates.

(b) All special committees shall consist of three or more members and shall be appointed to serve for one year concurrently with the term of office of the President appointing such committee unless perviously dismissed by him.

CHAPTER X, Section 1

Insert a new sub-section to be designated sub-section (d) to read as follows:

"(d) Undue Hardship.

Any member who suffers a temporary physical disability or who for other good and sufficient reasons would suffer an undue hardship by the payment of his dues in this Association may be granted a waiver of such dues for not more than one year at a time on recommendation by the component society of which he is a member of this component society has also waived his local dues, and upon approval of such recommendation by the Council."

CHAPTER X, Section 1

Insert a new sub-section to be designated sub-section (e) to read as follows:

"(e) Military Exemptions.

Any member of this Association who enters active duty in the Armed Forces of the United States during any period of national emergency shall be exempt from the payment of his dues in this Association for the calendar quarter of the year in which he enters active duty and for such time as he remains on active duty and until January 1, following his release from active duty. Provided further that any member who has paid his dues in full prior to his entry on active duty shall receive a refund of such dues for the calendar quarter in which he entered active duty and for the remaining quarters of the year for which his prior payment was made. Provided further that any member of this Association who is the spouse of a member exempt from

dues under this sub-section and who by reason of the military service of the other spouse finds it necessary to discontinue the active practice of medicine, shall be entitled to the same exemption privileges as provided in this sub-section for those in military service."

It was *moved* by Doctor Smith that the report of the Committee be accepted and the amendments be approved. *Motion seconded* by John Matt, M.D., Tulsa, and *carried.*

The Report of the Necrology Committee was read by Doctor McGill in the absence of the Chairman, P. P. Nesbitt, M.D., of Tulsa, which was as follows:

The Committee on Necrology submits the following report to the House of Delegates:

Since the last necrology report in June, 1950, the Almighty in His Infinite Wisdom has called from our midst 29 of our beloved friends and co-workers. While we bow in sorrow to the will of the Omniscience, we are appreciative of these wonderful men — physicians, scientists, teachers and friends, and their far-reaching influence which will continue to inspire us to carry on our duties to humanity.

THEREFORE, BE IT RESOLVED that the House of Delegates of the Oklahoma State Medical Association recognize the demise of those former 29 fellow members and instruct the Secretary to inscribe with honor and regret the following names upon the records of the Association:

W. H. Anron	Pawhuska	December, 1950
P. H. Anderson	Forsythe, Mo. (formerly of Anadarko)	November, 1950
James E. Arrington	Frederick	June, 1950
W. D. Baird	Oklahoma City	May, 1951
W. T. Blount	Durant	February, 1951
Carl T. Brundage	Oklahoma City	June, 1950
James M. Byrum	Shawnee	December, 1950
John V. Clark	Oklahoma City	September, 1950
A. W. Clarkson	Valliant	November, 1950
N. L. Cornwell	Coyle	June, 1950
G. R. Gerard	Chickasha	May, 1951
D. M. Gordon	Ponca City	October, 1950
Charles Haygood	Shawnee	May, 1951
T. A. Hill	Cleveland	May, 1950
W. R. Joblin	Porter	June, 1950
Abner Mackey	Oklahoma City	June, 1950
James L. Miner	Tulsa	June, 1950
L. A. Mitchell	Stillwater	September, 1950
J. A. Munn	McAlester	September, 1950
Clyde Ramey	Stilwell	January, 1950
John A. Reck	Oklahoma City	November, 1950
Frank W. Rogers	Carnegie	December, 1950
LeRoy H. Sadler	Oklahoma City	January, 1951
F. M. Sanger	Oklahoma City	April, 1951
Edward N. Smith	Oklahoma City	February, 1951
John Samuel Stults	Altus	March, 1950
Hardin M. Walker	Buffalo	August, 1950
John B. Walker	Enid	January, 1951
S. G. Weber	Bartlesville	1951

Respectfully submitted,
COMMITTEE ON NECROLOGY
P. P. Nesbitt, M.D., Tulsa, Chairman
George H. Neimann, M.D., Ponca City

Following the report members of the House stood in a moment's silence honoring these physicians.

The next item of business requiring the action of the House was the matter of Life, Honorary and Associate Memberships. The Speaker first read the following *Honorary Memberships* that had been approved by the Council:

Lea A. Riley, M.D., Oklahoma City
David W. Griffiin, M.D., Norman
*J. M. Alford, M.D., Oklahoma City
*Everett S. Lain, M.D., Oklahoma City

It was *moved* by R. Q. Goodwin, M.D., Oklahoma City, that in view of the amendment to the Constitution and By-Laws adopted at this meeting that the names of *J. M. Alford, M.D., Oklahoma City, and *Everett S. Lain, M.D., Oklahoma City, be added to the list submitted for Honorary Membership. *Motion seconded and carried.*

It was *moved* by Allen G. Gibbs, M.D., Oklahoma City, that the four physicians be accepted and approved for Honorary Membership. *Motion seconded and carried.*

The Speaker then read the following *Life Membership* petitions which had been approved by the Council:

E. Eldon Baum, M.D., Britton
Thomas Berry, M.D., Eldorado
John R. Callaway, M.D., Pauls Valley
Hiram G. Campbell, M.D., Tecumseh
Pierre N. Charbonnet, M.D., Tulsa
J. W. Childs, M.D., Tulsa
H. Lee Farris, M.D., Tulsa
W. T. Hawn, M.D., Binger
J. B. Lansden, M.D., Granite
T. C. Leachman, M.D., formerly of Woodward
Russell C. Pigford, M.D., Tulsa
E. M. Poer, M.D., Mangum
D. D. Roberts, M.D., Enid
Thomas W. Stallings, M.D., Tulsa

It was *moved* by W. S. Lrarabee, M.D., Tulsa, *seconded* by Robert Funk, M.D., Tulsa, that the above named physicians be accepted and approved for Life Membership. *Motion carried.*

It was announced by the Chair that the following names had been approved by the Council for Associate Membership:

Lt. Col. Byron A. Nichol, Fort Sill Station Hospital, Fort Sill
Edward H. Sutliff, M.D., Indian Hospital, Clinton

It was *moved* by Shade D. Neely, M.D., Muskogee, *seconded* by F. R. First, Jr., M.D., Checotah, that the above named physicians be accepted and approved for Associate Membership. *Motion carried.*

Doctor Sugg introduced Louis H. Ritzhaupt, M.D., Guthrie, a member of the Oklahoma Senate, who spoke briefly, commending the profession and especially the Public Policy Committee for their accomplishments during the session of the 23rd Legislature.

The Speaker stated that the next order of business was election of officers. Doctor Sugg read a letter from George H. Garrison, M.D., Oklahoma City, asking that his name be withdrawn from those nominated for Speaker of the House of Delegates. James Stevenson, M.D., Tulsa, stated that Bruce Hinson, M.D., Enid, had asked that his name be withdrawn as a nominee for Alternate Delegate to the A. M. A. Since there were no other nominations for Alternate Delegate to the A. M. A., the Speaker stated that nominations were in order at that time. W. K. Haynie, M.D., Durant, nominated W. W. Cotton, M.D., Poteau. Forrest Etter, M.D., *moved* that nominations cease. *Motion seconded and carried.*

Doctor Sugg asked W. K. Haynie, M.D., Durant, Vice-Speaker, to conduct the election of officers.

Doctor Haynie entertained a motion that Doctor Sugg be elected President-Elect by acclamation. Marshall O. Hart, M.D., Tulsa, *moved* the same. *Motion seconded* by W. W. Cotton, M.D., Poteau. *Motion carried unanimously.*

The Speaker called for a motion regarding the office of Secretary-Treasurer. McLain Rogers, M.D., Clinton, *moved* that Lewis J. Moorman, M.D., Oklahoma City, be elected by acclamation. *Motion seconded and carried unanimously.*

A motion was called for regarding the office of Alternate Delegate to the American Medical Association. It was *moved* by James Stevenson, M.D., Tulsa, that W. W. Cotton, M. D., Poteau, be elected by acclamation. *Motion seconded and carried.*

The Speaker called for a motion in regard to the Councilors and Vice-Councilors nominated from Districts 2, 5, 8, 11 and 14. Doctor Sugg *moved* that the Councilors and Vice-Councilors be elected by acclamation. *Motion seconded and carried.*

The office of Vice-President was next to be filled. V. K. Allen, M.D., Tulsa, stated that he had been nominated for Vice-President but had just been elected Councilor from District 8, making it necessary that his name be withdrawn as a nominee for Vice-President. John F. Burton, M.D., Oklahoma City, requested that his name be withdrawn as a candidate for Vice-President.

The Speaker stated that nominations were open for Vice-President. R. Q. Goodwin, M.D., Oklahoma City, nominated E. H. Shuller, M.D., McAlester. V. K. Allen, M.D., Tulsa, nominated W. S. Larrabee, M.D., Tulsa. J. R. McLauchlin, M.D., Oklahoma City, nominated Allen Gibbs, M.D., Oklahoma City. It was *moved* that nominations cease. *Motion seconded and carried.*

The Speaker asked the Tellers to distribute ballots and stated that election of Vice-President was in order. The results of the election: Shuller — 36; Gibbs — 31; Larrabee — 20. Doctor Shuller withdrew in favor of Doctor Gibbs. It was *moved* by A. T. Baker, M.D., Durant, that Doctor Gibbs be elected. *Motion seconded and carried.*

The Speaker stated that Malcom Phelps, M.D., El Reno, and John F. Burton, M.D., Oklahoma City, had been nominated for Delegate to the A.M.A. Ballots were distributed and a vote taken. Results of the election: Doctor Phelps — 40; Doctor Burton — 48. The Speaker announced that Doctor Burton was elected Delegate to the A. M. A.

For Speaker of the House of Delegates, Doctor Haynie stated that M. J. Searle, M.D., Tulsa, and Clinton Gallaher, M.D., Shawnee, had been nominated. After a vote by ballot the Tellers made the following report: Doctor Searle — 19; Doctor Gallaher — 55. The Speaker declared Doctor Gallaher elected by a majority vote.

This completed the election of officers. Doctor Haynie asked Doctor McGill to take the Chair. Doctor McGill expressed his thanks and stated he was proud to be a member of the Oklahoma State Medical Association and humbly grateful for the privilege of having served as President.

Doctor Haynie introduced the new officers and members of the Council.

There being no further business to come before the House, it was *moved* by W. W. Cotton, M.D., Poteau, that the 1951 Session of the House of Delegates be adjourned. *Motion seconded and carried.*

Respectfully submitted,

/s/ Alfred R. Sugg

Alfred R. Sugg, M.D.

Speaker of the House of Delegates

Reported by Rosalee Baskins

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This handy booklet for new mothers was "built to doctors' orders". It contains blank forms for filling in your instructions and formulas.

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